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Vol. XXXV.

JULY 15, 1907.

No. 14.



ILLINOIS pure-food law went into effect July 1—an A 1 law, in harmony with the national.

SHEEP in an apiary are all right with hives raised as on page 904; but don't try it with hives low down. I've tried it, and know.

A QUEEN of Dr. Bruennich continued laying side by side with her daughter fully 11 months, then suddenly disappeared (*Leipz. Bztg.*, 85).

I TRIED putting brood over sections, as Fig. 3. p. 899, but had to give it up, because it darkened the cappings of the sections. Does Mr. Hand have no such trouble?

Endorsing R. F. Holtermann, p. 906, I may say that my practice has been to allow idle combs standing outdoors to be uncovered; not so good for the combs otherwise, but greatly safer from the bee-moth.

LEATHER-COLORED Italians are mentioned, p. 895, as coming from Switzerland. Strangely enough, a vote taken in the leading Swiss bee-journal showed a general consensus of opinion that all Italian blood should be suppressed and only pure blacks cultivated.

SPEAKING of the air-space cover, you say, Mr. Editor, p. 888, "Why not go one better and have the deep telescope cover?" Because, aside from the extra cost, it takes more strength and more time to handle two pieces than one. I don't know, though, whether it might not pay after all.

L. STACHELHAUSEN, I am pained to learn from Europaeische Bzht., 93, has for months been suffering severely from cancer of the tongue, with the painful prospect of losing part of that organ. Let us hope that a man

so useful to his bee-keeping friends in Germany as well as in this country may long be spared.

IN GETTING bees from old hives into new ones, E. W. Alexander, p. 896, says put the new hive with the queen on top of the old one, an excluder between. I wonder why he puts it on top, and not under the old one. Don't bees work brood down better than up? I once had a queen utterly refuse to lay for days when fastened upstairs.

RAUSCHENFELS (B.-Vater, 175) says a good colony will consume from Sept. 1 to April 6 about 26.4 lbs. honey; from April 9 to May 10, at least 11 lbs., and probably more if it is present; and from then to the last of August, with its great mass of brood, at least 52.8. That makes 90 lbs. the minimum, without counting any thing for the production of wax.

No one under 18 years of age is allowed by the Iliinois law, since July 1, to smoke in a public place, and the manufacture and sale of cigarettes are utterly prohibited. How is that for Illinois, Bro. A. I? [That would be tiptop, doctor, if it were true; but how about the following, which we clip from the Woman's National Daily of July 1?

The law passed by the last Illinois legislature, prohibiting the sale of cigarettes in that State, has been declared invalid by Judge Chytraus. He held that the body of the act did not conform to the title. He further said that the law was declared to be an act to "regulate," when, in fact, it was an act to "prohiolt."

If all of our righteous laws are to be thrown out by some "nullification act," what is going to become of us?—A. I. R.]

That fat comb, mentioned on page 888, where the capped comb has gone clear over the nail spacers, is all right for uncapping if you merely take the usual thin slice of cappings, for in that case you will not cut down to the nail. If you want to cut down to the frame, you can still make it, for the two spacers on each side are on only one end, and you are not much of an engineer if you can't start your knife in where the nails are and cut straight through where there are no nails. But I don't insist on metal spacers for extracting-frames. What I do insist upon is

that comb-honey men be not denied the best spacing arrangement just because it doesn't suit extracted-honey men.

PINE FORESTS, when cut over, give place to willow-herb. Can you tell us how many years the willow-herb continues? [Willow-herb is found all through the region of our cabin in the woods; but it grows more rank and strong after the forest has been burned off. After that, if undisturbed, I think it would continue to grow indefinitely. In fact, it sometimes comes up as a weed in potato or corn fields, and it is always found more or less in the fence-corners. As good farming prevails, however, willow-berb and all plants of that sort are crowded out. It has no value except for honey, so far as I know.—A. I. R.]

I HAVE READ that, in the Langstroth frame, there is a two-inch border of honey under the top-bar; and now comes the additional statement, p. 899, that bees "are often very loath to remove honey from the sides of a deeper one-brood-chamter, since bees always store honey at the sides of the brood, but never below it." Now will some one please be so good as to arise and say whether it is locality, strain of bees, or what, that makes bees do so differently here? Until late in the season I don't have any two-inch nor oneinch border in Langstroth frames; the amount of honey stored at the side can not be such a great deal with brood in from six to eight of the eight frames, and I have had many a pound of beautiful comb honey built below the brood. I have also had bees store in a body of extracting-combs under the broodchamber.

E. F. Atwater gives a bright plan for promptly starting his bees on outdoor feed (Review, 192). Break up some old comb into pieces about 1½ inches square. Dip these in the feed, lay one at the entrance to each hive, and kick the hive, if necessary, to get enough bees out. Then go around and pick up the bits of comb, bees and all; carry them on a queen-excluder or board, and dump them into the feed. The advantage of this plan is that all your own bees will be promptly started and will finish the feed before neighboring bees get notice. He says nothing about the time of day, but evening is probably preferable. I feel pretty sure that, after the first evening, it will be necessary to put only a little feed at one or two entrances to start the whole business going. If late enough in the evening it will be practically certain no neighboring bees will be on hand.

SLUMGUM is said (Deutsche Bzht., 93) to be good for manure. When perfectly dried, it contains nitrogen, 7.44 per cent; ash, 18.33 per cent; phosphoric acid, 1.01 per cent. Has it been tried as manure in this country? [Yes, doctor, it has been tried on a limited scale. When I was growing vegetable-plants I saved all through our plant-bed for highpressure gardening; but with the best apparatus we then had to remove the wax there was enough remaining to prevent the de-

composition of the slumgum, and so it was raked back and forth, and chopped up without doing any good that I could discover. Since recent experiments in removing all the wax down to less than one per cent, it might work differently. If it could be pulverized by some suitable machine, and then composted with stable manure, it ought to make a rich fertilizer.—A. I. R.]



Weather conditions for honey have improved materially since our last report. But we are fearful that so much bad weather previously has had an unfavorable effect on the blossoms, so that nectar, now that we have the right conditions, will not be secreted as it should be. Reports are lacking, and therefore we are unable to give any definite information. In the mean time we should be pleased to have our subscribers all over the country write, in one or two sentences on a postal card, whether they are getting any honey, and be sure to write at once. Meanwhile there is a strong probability that the honey crop will be light, and prices should rule accordingly.

A GLUCOSE-FACTORY BEING DEMOLISHED AS A RESULT OF THE PURE-FOOD LAW.

The national pure-food law has had some peculiar effects as the following excerpt from the *Louisiana Planter* of a recent date will show:

The work of demolishing the plant of the erstwhile Goyer-Alliance Glucose Company, at Belle Alliance, La., is progressing rapidly under the direction of the Chicago House-wrecking Company, which concern purchased the big establishment and is disposing of the mechanical equipment. A large proportion of the machinery has already been sold and removed, and the remainder is meeting with ready sale at good prices.

It may be added that some of the northern concerns in the same line have recently had financial difficulties of a like nature; but for excellent reasons we have said nothing about their troubles in this paper. But more anon.

THE VALUE OF PROTECTION FOR OUTDOOR-WINTERED COLONIES.

Mr. W. Z. Hutchinson, in speaking of some of the hard lessons learned in this remarkable spring, says:

As I carefully examined hive after hive, the conclusion was forced upon me that most of them had starred with honey in the hives. It was a peculiar combination, but one that is likely to occur in wintering bees out of doors with no protection.

Those of us who have had very much experience in wintering outdoors in single-walled hives have observed the same thing time and time again. The investment in winter-cases or in double-walled hives, even

during a single winter, is one that brings back a tremendous dividend. We conclude that it never pays in our cold northern latitudes to winter outdoors in single-walled hives, for the reason that too many times the bees will actually starve to death with plenty of stores in the hive. Why? Because the hive is too cold to allow the cluster to move over to where the stores are.

THE PEOPLE WANT TO KNOW.

The following was uttered by Dr. Wiley at the meeting of the Inter-State Cotton-seed Crushers' Association, held at Jamestown, Virginia, quite recently. There can be no doubt he is right on this matter, more particularly when he states the people are determined to know what they are eating every time they sit down to a meal.

There is no longer any excuse for trying to cover up matters of this kind. We should recognize the dictum that the days of delusion and deception are done. The people of this country are in earnest about this matter. This sentiment for correct names, for freedom from adulteration, is no mere brain storm which is sweeping over the country—it is the legitimate growth of education and a revival of the ethical principle of justice and of right. The people want to know, the people are determined to know, and the people can not always be deceived. I do not believe that any one of you here would care to continue to promote a business which was not worthy of your support.

CUTTING ALFALFA BEFORE IT BLOOMS — A BAD PRACTICE.

WE have already published matter from a variety of sources showing that the early cutting of alfalfa, before it blooms, is a wrong practice, hurtful alike to stockman and beekeeper. The following additional item appeared in the National Farmer and Stockgrower, and speaks for itself:

Many start out with erroneous impressions about cutting alfalfa. They have been induced to put in the crop because of its great feeding value, and that three or four cuttings may be taken from the field during one season. If you want a strong vigorous stand of alfalfa, don't be in too big a hurry to clip it to get rid of weeds, and don't cut the crop from a newly seeded field too soon. The crop should be pretty well matured before it is cut. It is important that the plant be well established and the crown buds set for subsequent crops before the first crop is taken off. After the first year, three or four cuttings may be made providing each one is done at the right time.

HONEST HELPFUL CRITICISM.

The following, on the subject of criticism, in the last *Bee-keepers' Review*, so exactly echoes our own sentiments that we are glad to place it before our readers:

Criticism, to be of any use, should be helpful. There is no great benefit in telling a man that he is doing something wrong unless we can also tell him how to do it better. Then there ought to be a kind, helpful spirit shown in criticism. Occasionally criticism is made in such a way as to lead one to believe that the chief pleasure or object of the critic is to show that some one is in the wrong—made in such a caustic manner as to rouse the combativeness of the one criticised. Criticism ought to be frank and free, but it need not be insulting nor insinuating in tone.

No firm or person is perfect. Many of them are ignorant of their own weaknesses, and to have those weaknesses pointed out is a real kindness. FINDING AND CATCHING QUEENS, AND CLIP-PING THEIR WINGS, WITHOUT HANDLING A FRAME.

APPARENTLY there has been a good deal of correspondence on this subject since the article by Mr. J. E. Hand appeared in our issue for June 15. Mr. Hand finds it necessary to say something more on the subject, which he does right here.

Mr. Root:—Regarding the clipping of queens' wings in sectional hives, as described and illustrated in my article in GLEANINGS for June 15, I fear I have not made my mode of operation plain enough; and for the benefit of those who wish to try this method of finding queens I would further add that, in case the colony is very strong in bees, we remove the top brood-section after driving the bees up, and place the queen-excluder on the next section and place the top brood-section on the queen-excluder before removing the cover. This should be done quickly before the reaction takes place, so that the bees will pass through the zinc into the hive below instead of boiling over the sides of the hives. A few puffs of smoke, and one or two shakes, with a quick jerking motion, will deposit the bees and queens upon the queen-excluder, through which the bees will quickly pass, leaving the queen in plain sight.

We used this method altogether this season, 1907, and although our colonies were very strong, each having three brood-sections full of bees from top to bottom, we did not experience the least difficulty in quickly finding the queens without handling the frames. About half the queens will usually be found either on the tops of frames or on the under side of the cover.

Birmingham, Ohio.

SPRAYING AFTER BLOSSOMS FALL.

Whenever an advertiser of spraying-outfits or chemical mixtures advocates in any of his printed literature the spraying of fruittrees while they are in bloom, we generally send in a friendly protest, calling his attention to the fact that experiment stations everywhere have condemned the practice, both from the standpoint of the fruit-grower himself and the bee-keeper. One of these companies to whom we addressed such a protest was the Merrimac Chemical Co., 33 Broad St., Boston, Mass. Their reply was so satisfactory that we are glad to place it before our readers, even if it does give a free advertisement to this company. And in this connection we are of the opinion that bee-keepers will be glad to patronize any company that regards their interests as well as those of the fruit-growers. The letter is as follows:

The A. I. Root Co.:—We are in receipt of your favor of the 17th inst., and contents duly noted. Replying we would say that we have always advocated spraying after the blossoms fall, and are perfectly aware that it is the only proper time to spray. Unfortunately, however, by a mistake on the part of our printer, and an oversight on ours as well, we did not notice the error in our booklet, where it says, "Spray just before the blossoms fall." We intended to say "just after the blossoms fall." We have sent these books to all the different colleges in the country, as well as numerous other people, and it has apparently escaped everybody's attention until it was brought to your notice. We shall certainly correct this on all literature which we send out in the future, as we do not wish to convey a wrong impression.

Boston, Mass. MERRIMAC CHEMICAL CO.

This is in splendid contrast to the attitude of another prominent manufacturer of spraying-outfits whom we might name. None so blind as those who won't see. But the intelligent fruit-grower and bee-keeper won't be

blind to their own interests. No, they will patronize companies like those whose letter is given above.

A DEAD-BEAT LIST OF HONEY-BUYERS.

GENERAL MANAGER FRANCE is doing a good thing in collecting a list of no-pay customers, and placing the same before the members of the National Bee-keepers' Asso-ciation who may call for it. The information given by this no-pay list may more than make up for the annual membership fee of \$1.00 for a good many years; or, to put it in another way, this is only one of the many ways that the National can save its members the small fee asked for membership several times over. Mr. France is doing a good work, and he should have the support of all right-thinking bee-keepers. It goes without saying, that any one who has had any experience with a no-pay customer should send the name in to General Manager N. E. France, Platteville, Wis., with a brief statement of the facts.

CHEMISTS WHO HAVE DONE A SERVICE TO APICULTURE.

France is mourning the loss of three of the greatest men the nineteenth century produced—all three being chemists of the premier rank-Berthelot, Moisson, and Curie. The latter was a native of Poland, but a Frenchman by education and adoption. Berthelot and Moisson rendered excellent service to the bee-keepers of all countries. It was Berthelot who showed how artificial glucose could be detected in adulterated honey by detecting the traces of minerals due to the use of mineral acids on starch, and also by the presence of dextrine; and, if these were not present, by its want of taste. The great chemist was at the time, 1878, in charge of the pharmacy of the Central Hospital of Paris.

Moisson invented a method for detecting the presence of ozokerite in beeswax, which at one time threatened the industry by its wholesale adulteration of the product of the apiary. This is of more importance to the bee-keepers of Europe than with us, for they pay far more attention to this production of wax than American bee-keepers do. Dealers were in the habit of adulterating beeswax by the addition of ozokerite to the extent of 30 per cent, and yet guaranteeing the same to be pure beeswax, and no one at the time could actually detect the fraud till Moisson attacked the problem. One very important fact he demonstrated was that beeswax is completely soluble in sulphuric acid, whereas ozokerite, paraffine, or ceresine was not. For these facts we are indebted to M. Ronsseray in L'Apiculteur. These two men are

ARTIFICIAL FERTILIZATION OF QUEENS.

deserving of great praise in thus allying themselves with the side of common honesty.

Some years ago there was considerable discussion as to whether queens might not be mated in a small cage or in a room; but after many fruitless attempts the idea was abandoned. It has been revived within the last five or six years; but so far nothing definite has been accomplished, unless it has been in the case of that mammoth cage of Mr. Davitt, as reported in the Bee-keepers' Review. In looking over our back volumes, looking for something else, we ran across an editorial item in our issue for April 15, 1882, and the same is reproduced here:

Last season Dan White took all the wingless queens he found, tied a delicate silk thread around their bodies, hitched it to a tall pole, when the drones were out thick, and let them buzz round with the stumps of their wings. Three out of ten were fertilized, and he he them laying now. he has them laying now.

Mr. White is one of our substantial beekeepers, and he would never report any thing of this kind unless it were true. He is still a bee-keeper, making a specialty of producing an extra quality of extracted honey. The item is interesting, not only because it is true, but because there are possibilities along the line of "hitching up" several queens to a long pole by means of a silken thread, and leaving the pole in a yard where a lot of selected drones are allowed to fly. But the question might be raised, "What advantage would be secured over the natural way of queen-mating?" It is well known that queens and drones both may fly some distance from the home yard. This increases greatly the possibilities of queens mating with undesirable stock from the woods, or bees of other yards where no attempt is made at the selection of drones. Tying the queens up and causing them to mate while so tied may enable one with a good strong glass to witness more minutely the operation.

The account of Mr. White's experience is

here reproduced in order that some of our readers may test the matter again; and instead of a long pole would it not be more feasible, on a perfectly still day, to elevate the hitched-up queens by means of a toy rub-ber gas-balloon? After the thing has been up an hour or two pull it down. Perhaps some one with more time and enthusiasm at his disposal than we have can try this out and report. Or is there some one since Mr. White's early experiments who has tried something of this kind?

RULING ON HONEY-LABELS BY THE SECRE-TARY OF AGRICULTURE; LABELING HONEY IN GENERAL.

It appears that a letter was addressed by the General Manager of the National Beekeepers' Association to the Secretary of Agriculture, James Wilson, asking for a ruling on certain labels and the labeling of honey in general. 5" put out (See "Information Bureau No. put out by the Association.) As the reply contains much valuable information we take pleasure in presenting it here:

DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C. WASHINGTON, D. C. WASHINGTON, D. C. and be made to the form of seal label which you submit. In regard to the shipment of honey without label, I may say that you do not violate the law in so doing provided it is pure honey and not something other than what it is sold for. If the honey is shipped

from one State to another, and the party receiving it puts his own label on it as if he were the producer, he violates the law by representing the product as having been made in a State different from that of its actual production. The shipper, however, of such honey will not be amenable unless he is a party to the fraud, and benefits thereby. The law does not require a label to be placed upon food products, but does require that if one is used it must be a truthful one. Unlabeled food products are covered by Section 8, first paragraph under foods, which states that a food is misbranded "If it be an imitation of or offered for sale under the distinctive name of another article." ale under the distinctive name of another article. sale under the distinctive name of another article." Thus honey which is pure and unlabeled, sold as honey, is wholly within the protection of the law; but if honey be adulterated by admixture with glucose, and sold as honey, then the law is offended. If honey which is produced in Wisconsin, however, is sold to a dealer in Illinois, and the dealer in Illinois places upon it his own label as if it were produced in Illinois, and sells it in original packages in Illinois, or repacks and ships in interstate commerce, the law is offended, because a false statement is made respecting the and snips in interstate commerce, the law is observed because a false statement is made respecting the State in which it is produced, which is a violation of the first paragraph of Section 8 of the law. You will find the law on standards of purity of honey in Circulars 19 and 21, which I enclose. Respectfully,

JAMES WILSON, Secretary.

In a word, the Secretary says that it is not necessary to label pure honey; but if a label is used it must state the truth and nothing but the truth. There is one point, however, on which we are not quite clear. We have written to the Secretary for information, and as soon as we receive his reply we will place the same before our readers

To illustrate the point of uncertainty we will suppose a case. Mr. John Jones, of Blankton, Ohio, does a general bottling business in pure extracted honey. The labels he uses on all the bottles read as follows:

"Pure extracted honey put up by John Jones, Blankton, O."

We will suppose that the honey that John Jones produces in his own yard is usually a blend of clover and basswood, and that his own apiaries can not begin to supply the bottling trade, so that he is compelled to buy largely, and make up a blend of pure clover, basswood, and alfalfa. The basswood may one year come from Wisconsin, and at another time it may come from Michigan; and the same is true of the clover. His alfalfa may one year be produced in Colorado, and at another time in Nevada. Now, the question is, would he be violating the national purefood law if he makes up a blend of these three pure honeys and sells them under the label given, in any State but Ohio? Or, to put the question in another way, can John Jones, if he does not claim to produce the honey, sell his labeled goods in any State, providing the claim made is that the honey is pure and is "put up by" him? We are in doubt, but have written the Secretary for a ruling on this point, and hope to be able to give his reply at a later time.

Should it not be permissible to make up a blend of pure honey from three or four dif-ferent States, then honest honey-bottlers those who handle nothing but pure honeymight be placed in a very awkward position, for the reason that they can not always determine from which State the honey is produced, neither can they beforehand, when ordering labels for the season, anticipate from what State the stock will come. Bottlers would take the position, probably, that

would seem to us that, if honey he guaranteed to be pure, and no further claim than that it was "put up by" a responsible individual or firm, there would be no violation of the national law, because no wrong or misleading statement would be made. But it is perfectly clear that he can not say "produced by" unless such honey bearing such labels came from his own bees.



SWARMING INDUCED BY SUPERSEDING.

Nearly every swarm I have had this year could be traced directly to a failing queen. It does not pay the bee-keeper who expects to control swarming to allow the bees to do their own superseding. Too often they will select the beginning of a honey-flow as the time for this. The result is a swarm, although the colony may be in poor condition to swarm. Very often the old queen never amounts to any thing afterward, and somehow it often happens that they do not try again to supersede her, so unless they are watched, and the queen replaced, the colony soon dwindles away to nothing.

SMOKER-LIGHTERS.

The use of pieces of rag or other material soaked in a solution of saltpeter to use in starting the fire in the smoker is one of those kinks that add largely to the comfort and convenience of the apiarist. In preparing these, be careful that you get the right kind of saltpeter. What you want is the nitrate of potash. I have known cases where the druggist substituted, for this, nitrate of soda, or "Chilian saltpeter," as it is sometimes called. For many of the purposes for which saltpeter is used this is all right: but it is not good for smoker-lighters. It does very well when it is dry, but it absorbs moisture from the air so readily that in damp weather it becomes quite wet, in which condition it is very unsatisfactory for starting fires.

SHAKING BEES OUT OF SECTIONAL HIVES.

Are you really sure, Mr. Editor, that it is practicable to find queens by shaking the bees out of the hive, only with black bees? For some years I have had the idea that I could shake any colony, Italian or black, out of a properly made sectional hive, and find the queen in far less time, on an average, than is ordinarily consumed in finding a queen by hunting her up on the combs. I use a little variation of the Heddon method, and told the readers of GLEANINGS how it was done, some years ago. You threw cold

water on the plan at that time, I remember, and the bee-keeping public has never taken much notice of it since, possibly because of that cold water; but the plan is all right, nevertheless, and has been in practical use in my apiaries for fifteen years or more. I frequently find queens by the plans given by Mr. Hand, especially the first one. This also, by the way, was made public some years ago by that veteran bee-keeper M. M. Baldridge. But for steady use I prefer the plan of shaking them out. It is perfectly practi-cal with any race of bees with which I am acquainted, when you know how. I will tell you again before long just how to do it.

"SWEET CLOVER IN A NEW LIGHT."

That is certainly a new light in which sweet clover is placed in the paragraph on p. 823. I have fed sweet clover and sweetclover hav at various times and for various periods during the past ten years or more, and I never noticed any injurious effects from it whatever. In fact, at one time when we fed our three Jerseys for several weeks on nothing but sweet-clover hay and bran, we decided, according to my recollection, that it made a little nicer butter than any thing else. At any rate, private customers gladly took it at the highest market price. The idea of adding it to other varieties of hay is doubtless good; but it should be done at the time the hay is made and stacked away. I wish some of those who are skeptical about the value of sweet-clover hay could have watched my horses several weeks ago. We had cut a small quantity of sweet clover for hay, and put it into the barn alongside of the old alfalfa hay on which the horses had been living all winter. A few days later the young man who had been doing the feeding came to me and said, "That sweet clover makes fine hay. The horses like it better than al-falfa. I have been trying to get them to use up the old hay by mixing the new hay with it, but they will hunt out every bit of the sweet clover before they will eat any of the old hay.'

DESTROYING QUEEN-CELLS TO PLEVENT AFT-ER-SWARMING.

A few years ago I received a letter from a man who offered to reveal to me an infallible method of preventing after-swarming. He did not ask for any compensation, and the only stipulation he made was that I should keep it a secret. To this I readily agreed, and soon another letter came with the particulars as to the valuable discovery. I was to wait until five days after the colony had swarmed, then cut out all queen-cells but When I wrote back to him that his method was not exactly new or altogether desirable or reliable, he became very angry at me. I believe he thought I was trying to rob him of the credit and benefits of his great discovery. Be that as it may, I have never revealed his secret from that day until this, and it is but very seldom that I have made any use of his method. Beginners in beekeeping very often put their faith in this plan, and I have known quite a few men of considerable experience in bee-keeping to depend upon it. The greatest objections to the plan are the great amount of labor involved and the great liability to miss some of the cells, making all the labor in vain. There are times when it seems to be the best thing to do, and a few hints on how best to go about it may not be amiss. First select the cell you want to keep, taking care that it is in a position where it will not be likely to be damaged in getting it back into the hive. Then carefully brush all or nearly all the bees from this frame, remembering that you must not shake it or handle it roughly or you may injure the immature queen. Having the bees out of the way, look carefully for other cells. Pay particular attention to all the edges of the comb. Sometimes a cell will be so doubled up against the bottom or end bar of the frame that only the closest scrutiny will detect it. Sometimes a queencell will be built on the smooth surface of a solid frame of sealed brood, projecting only slightly above the surface. Here you come to another great fault of the plan, which is that the poorest and smallest cells are most likely to be overlooked, yet will defeat your labor just as surely as the large fine ones, with the added disadvantage that the queens they produce are apt to be of poor quality. After you are through with this first frame, the others may be handled with less cere-mony shaking the bees off to make a thorough inspeciton.

Do not let your selected cell remain long unprotected if it is cool, nor let it stand in the hot sun. In spite of all your care you are likely to find sometimes that your one selected cell never hatches; and unless you look after such colonies closely you may find some of them hopelessly queenless. Or the queen may have some defect in her wings or otherwise, which will keep her from being mated. Such things are not likely to happen when the selection of a queen is left to the survival of the fittest after they are hatched. I believe some have reported that the bees have swarmed out with the only queen left in the hive. I have never had this experience, but it might occur when the swarming fever was prevalent and the cells were not destroyed until nearly time for

them to hatch.

Taken altogether, this way of preventing after-swarms is not to be recommended. Better methods are the well-known Heddon plan, or the similar one of leaving the old hive beside the new one for a week, then removing it so as to deplete the old colony as much as possible. Better yet, when a later yield of honey may be looked for, is the plan of giving the colony, as soon as it has swarmed, a ripe cell, or a newly hatched queen, or, still better, a laying queen. Usually at this time a queen may be turned loose with perfect safety; and as the colony is weak in numbers she or the bees may be depended on to destroy the cells more certainly and cheaply than you can do it.



TEXAS BEE-KEEPERS' ASSOCIATION.

After a long delay it was ascertained that the annual meeting of the Texas Farmers' Congress takes place again this year at College Station, Texas, July 23 and 24, 1907. There will be low railroad rates, and a large attendance as usual is expected.

The Texas Bee-keepers Association is one of the sections of this congress, comprising some twenty State organizations of all the varied industries of Texas. It is hoped that a large number of bee-keepers will be in at-

tendance. A good program will be arranged.
Prospects for the Texas bee-keepers have improved somewhat over previous reports. Abundant rains, and lots of them, have freshened up every thing considerably, and bees are humming again as of yore.

BEE-KEEPERS' EXHIBITS.

Exhibiting by bee-keepers of their products is a valuable thing to do. It is a good way to advertise, hence more exhibits should be made. This was decided upon at the last meeting of the Texas Bee-keepers' Association when the question "How can this Association become more effective in its work?' came up for discussion. It was decided then and there to have in connection with its annual meetings an exhibit of the products from the apiaries of its members, not only to advertise these, but it was thought that, through this, a greater interest would be taken in the annual meetings, hence increase the membership of the association. er this will come true remains to be seen; but it is hoped that the results will be favorable.

A committee on exhibits was appointed to look after such matters as exhibiting at not only the annual conventions of the association but exhibits at fairs, etc., where beekeepers' exhibits should be made. This committee consists of the following members: Louis H. Scholl, chairman; Willie Atchley, W. H. Laws, Dr. C. S. Phillips, W. O. Victor. Solicitations were made at once, and in a short time contributions almost sufficient for the premium list, to be given as premiums to exhibitors, were donated. This list is appended herewith.

Now for the members of the Texas Beekeepers' Association, an invitation is extended to all to cooperate in this work. A creditable exhibit means much to our association and the bee-keepers generally. If you have any thing to show, let us know about it—at least, write what you have.

There are, every year, hundreds of eager visitors during the several days' meeting of the Texas Farmers' Congress, all ready to see and listen to "all about bees," hence it is an excellent opportunity to the exhibitors. While the premiums offered are not as large as those of our previous lists of the larger fairs, they are well worth the trouble to com-pete for, besides the blue and red ribbons which will be awarded for first and second For any other information kindly address the writer, as secretary-treasurer of the association, and chairman of the committee, at New Braunfels, Texas.

LIST OF PREMIUMS DONATED FOR THE BEE-KEEP-ERS') EXHIBIT AT COLLEGE STATION, TEXAS.

Bees, all in one-comb observatory hives.

1. Golden Italians, bees and queens:

a Year's subscription to Gleanings, by L. H. Scholl, \$1.00.

b One Root smoker, by Texas Seed and Floral Co., \$5 c.

- 2. Three-banded Italians, bees and queen:

 a Subscription to GLEANINGS, by L. H. Scholl, \$1.00.
 b Bingham honey-knife, by Texas Seed and Floral Co., 80 c.
- 3. Carniolans, bees and queen:

 a Subscription to Gleanings, by Louis H. Scholl, \$1.00.

 b Hive-tool, brush, imbedder, and wax-tube, by Texas Seed and Floral Co., 80 c.

Caucasians, bees and queen:

 a Subscription to Am. Bee Journal, by L. H. Scholl, \$1.00.
 b Hive-tool, brush, and gloves, by Texas Seed and Floral Co., \$0 c.

5. Cyprians, bees and queen: a Am. Bee Journal one year, by L. H. Scholl, \$1.00. b Drone-trap and entrance-guard, by Texas Seed and Floral Co., 80 c.

- 6. Holy Lands, bees and queen:
 a Am. Bee Journal one year, by L. H. Scholl, \$1.00.
 b Novice honey-knife, by Texas Seed and Floral Co., 80.
- 7 Black bees and queen: α Bee-veil and gloves, by Texas Seed and Floral Co., \$1.00. b Manum swarm-catcher, by the same, 80 c.
- 8. Bumble-bees, bees and queen, or best display:

 a Bee-veil and gloves, by Texas Seed and Floral Co., \$1.00.
 b Four Porter bee-escapes, by the same, 80 c.
- 9. Best and largest display of bees of various races in observatory hives:

 a One complete ten-frame comb-honey hive, by W. H.
 White, \$2.50.

 6 One complete eight-frame comb-honey hive, by Willie
 Atchley, \$2.00.
- 10. Best and largest display of queens of various races, in mailing-cages:

 a One Root Jumbo smoker, by Texas Seed and Floral Co., \$1.50.

 b One Root's A B C of Bee Culture, by the same, \$1.25.
- Best case of white section honey, 12 lbs. or more:
 a One tested golden queen, by Willie Atchley, \$1.50.
 b One untested Carniolan queen, by J. W. Pharr, \$1.00.
- 12. Best case of amber section honey, 12 lbs. or more:

 a One tested Holy Land queen, by Willie Atchley, \$1.50.

 b One untested Carniolan queen, by J. W. Pharr, \$1.00.
- Best and largest display of section comb honey:
 a Two two-frame nuclei, by J. W. Pharr, \$4.00.
 b One breeding queen, by A. G. Anderson, \$3.00.
- Best display of special designs of comb honey:
 a One tested albino queen, by Willie Atchley, \$1.50.
 b One untested Carniolan queen, by J. W. Pharr, \$1.00.
- 15. Best 12 1-lb. friction-top pails of white bulk comb honey: a One select golden queen, by J. W. Taylor, \$1.25. b One untested Caucasian queen, by J. W. Taylor, \$1.00.
- 16. Best 6 1-lb. friction-top pails of white bulk comb honey:
 a One select golden queen, by J. W. Taylor, \$1.25.
 b One untested Caucasian queen, by J. W. Taylor, \$1.00.
- 17. Best 3 1-lb. friction-top pails of white bulk comb honey: α Select golden queen, by J. W. Taylor, \$1.25. b One untested Caucasian queen, by the same.
- 18. Best display of bulk comb honey:

 a One Italian breeding queen, by W. H. Laws, \$5.00.

 b One Italian breeding queen, by the same, \$3.00.
- 19. Best 12 jars of white extracted honey:

 a Mushroom spawn, grown by Udo Toepperwein, \$1.50.
 b One untested Carniolau queen, by J. W. Pharr, \$1.00.
- 20. Best 12 jars of light-amber extracted honey:
 a Comb foundation, by Udo Toepperwein, \$1.50.
 b Mushroom spawn, by the same, \$1.03.
- 21. Best display of extracted honey: a Five Italian queens, by F. L. Aten. b One select tested Italian queen, by W. H. Laws, \$2.50.
- 22. Best display of extracted honey in granulated form:
 a One breeding queen, by Udo Toepperwein, \$3.00.
 b Comb foundation, by the same, \$2.00.
- 23. Best sample cake of light-yellow beeswax, not under 2 lbs.

 a Two Italian queens, by Grant Anderson, \$2.00.

 b One select Italian queen, by the same, \$1.50.
- 24. Best and largest display of beeswax:

 a Comb foundation, by Udo Toepperwein, \$5.00.

 b One select tested Ital. queeu, by Victor-Knolle Co., \$2.50.

- 25. Best display in special designs in beeswax:

 a Select Italian queen, by Udo Toepperwein, \$2.00.

 b Mushroom spawn, by the same, \$1.50.
- 26. Best display of fruit preserved in honey:
 a One Italian queen, by Udo Toepperwein, \$1.50.
 b Mushroom spawn, by the same, \$1.00.
- 27. Best collection of honey-plants, pressed and mounted:

 a Comb foundation, by Udo Toepperwein, \$3.00.

 b One Jumbo smoker, hive-tool, brush, and gloves, by the

 Texas Seed and Floral Co., \$2.50.
- 28. Best honey vinegar: α One tested Cyprian queen, by Willie Atchley, \$1.50. b One Atchley improved queen, by the same, \$1.50.
- 29. Best instructive display in apiarian products, and of various uses made of honey and beeswax:

 a One eight-frame colony of Caucasian bees, by Willie Atchley, \$5.00.
 b Three untested queens, by Victor-Knolle Ap. Co., \$3.00.
- 30. Best and largest display of bee-keepers' supplies:

 a One Italian breeding queen, by Victor-Knolle Aplary
 Co., \$5.00.

 b One Italian breeding queen, by the same, \$3.00.



HINTS ON BEE-FORAGE.

The German empire of to-day is hardly more than a third of a century old, and yet in many respects the Germans are at the head. Their advance in almost all lines is phenomenal. They have taken highest rank in research, and have justly gained a reputation for close, thorough, accurate work that any of us may well covet. How is this to be explained? The Germans are not as good workers, nor do they work with the energy, anywhere near, that the Americans exhibit. It is said by good authorities that the Germans will do a third less in a day than will the Americans. I think that the word "thoroughness" explains the astonishing progress of this great people. They show this same thorougnness in observation, and so are not hindered by inaccurate or incomplete knowledge. Thus when they tell us that the bees get a very considerable part of their honey from the phacelia, they know that it is so, and we may believe their statement. In such matters the Germans may give us two excellent hints. They know; and, what is more to the purpose, they know positively. How many of us have really observed so as to have any idea, from our own examination, just where the bees get their nectar? and when we have a thought in the matter, how many of us are sure of the facts? Our German brothers know that from phacelia, an introduced plant that occupies waste ground, they get much of their best honey. Is there not an important suggestion here forus? Should we not ask our Department of Agriculture to seek out "phacelias" in other countries for us? and should we not observe our own plants more carefully, and see if we have not in our own fields, and along our own roadsides, plants that, if they were more numerous, would add greatly to our honeyresources? We know that cold and drouth dry up the

nectar fountains of many of our honey-plants. May there not be scattering plants rich in nectar-secretion that are independent of heat and drouth, or at least more independent than many of the plants on which we have heretofore depended? I have been led to this opinion by noting the bees on wild plants when the orange blossoms and alfalfa seemed not to attract them at all. We know that the rapid growth of our useful plants, consequent upon cultivation, enfeebles them in other ways; and, if so, why not in this mat-ter of nectar secretion? I believe that we should know of a truth, by actual observation, just what plants give nectar, the quality of the nectar, their susceptibility to cold and to drouth, and then when we find "weeds" which are of real value we see to it that they occupy every possible foot of waste ground in the range of our bees. I have known but one bee-keeper, in all my long acquaintance with bee-keepers, that I thought improved his opportunities to any thing like the degree possible, and warranted by the importance of the matter, and that was our old friend D. A. Jones, of Beeton, Canada. Along the railroad, and in all waste places, he had planted borage, motherwort, catnip, figwort, and a host of other honeyplants which were no longer weeds, as they were no longer plants out of place. I believe that a close search in other lands, close observation of honey-plants that we may know surely just their value, and extensive planting in all waste places, will very likely add materially to our honey resources, and very likely make us more independent of cold and drouth.

TREE-PLANTING FOR HONEY.

It may be well for the bee-keeper to pay in part, at least, for the seed to induce his neighbor to grow alsike clover and alfalfa. It surely will be wise for every bee-keeper to become a crank on the matter of tree-planting along the public way. There are three reasons, each of which would be enough to warrant every effort to make this matter of tree-planting general. The value of trees to the country in affecting climate can not be overestimated. Europe has learned from bitter experience the necessity of trees to regulate temperature and rainfall, and so is far more alive to the necessity of tree-planting than are we. Wisdom shouts at us to learn of them, and save the fertility of our country.

Again, nothing adds so much to the beauty of a landscape as do beautiful trees. Britain, France, Germany, and, indeed, almost all the countries of Europe, are more like great parks than like the treeless, desert-like plains so often seen in our own America. Beauty is always attractive; and would we increase the value of our farms and lots, we will make all haste to push tree-planting to the utmost. Much of Germany is famed for its avenues of uniform trees along all the highways. Let us all spring to our opportuni-ties, and see to it that all our roadsides are adorned with the best of our magnificent forest trees.

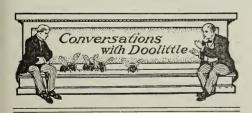
A third reason for tree-planting is that we may thus add immensely to the honey resources. Here, again, Germany has set us a good example. There we find the linden, the maple, the locust, and the catalpa, and many other trees that are of great value to the bee-keepers.

WHAT TO PLANT AND WHY.

In our country, east, the maples, tulip, and linden all claim attention as among the best trees for roadside decoration. The soft maple comes very early and is beautiful, especially in the autumn, when their wealth of color is transcendently beautiful. The bees get nectar from the soft maple very early, and are stimulated to rapid brood-rearing. The hard maple comes in bloom later, but is a close rival of the other in beauty. Unfortunately the maples are attacked by borers; but if we rub the trunks of newly set trees the last of May with soft soap or strong soap solution we can save our trees and will rejoice in their health and beauty. Fortunate the bee-keeper who has many maples in easy range of his yard.

The tulip is wondrously beautiful, is a fine honey-tree, and is excellent for lumber. I have never yet seen it set along the highway, and this is not complimentary to the enterprise or patriotism of our American people. The linden, or basswood, is the incomparable tree for roadside planting. It is wondrously beautiful, and is the tree par excellence for honey. All of the above trees are attacked by the great tulip scale, but I have watched the splendid trees of all these varieties on the campus of the Michigan since their planting in 1858; and the other day, as I sat again beneath them, I could not see any loss of health or vigor,

In California and on the Pacific coast the eucalyptus, acacia, and the beautiful peppers are strong vigorous growers, very beautiful, and are all of value as honey-trees.



POLLEN, PROPOLIS, ETC.

"Mr. Doolittle, some of my colonies stored lots of pollen in the sections last year, and they are beginning to do the same thing this year, and I want to know why they do this."
"The storing of pollen in the surplus apart-

"The storing of pollen in the surplus apartment to the hive is largely brought about by the queen filling the brood-chamber so full of brood that there is not room enough for all of the needed pollen below. This is a thing which does not happen regularly where a large brood-chamber is used; but with our small hives, such as the eight-frame Lang-

stroth or the nine-frame Gallup, it is not at all unusual for this state of affairs to exist, where no precautions are used."

"What are the precautions which can be

used?"

"A break-joint or queen-excluding honeyboard will help very much."

"What is a break-joint honey-board?"

"It is a honey-board so made that the openings from the brood-chamber below to the surplus apartment above come directly over the center of the top-bar to each frame, instead of being over the passageways between the combs, as the honey-boards of our fathers were made. This causes the bees to come up over the tops of the frames to get into the sections, or gives a crooked passageway, instead of the continuous passageway of our fathers."

"Very well; but what has that to do with

the matter of pollen-storing?"

"Such a circuitous route causes the bees to think that the room above is not a part of the brood-chamber, so they do not store pollen in it, for pollen is, as a rule, stored close to the brood. For the same reason, large hives give the same results, as in this case there is usually quite an amount of sealed honey between the brood in the hive below and the surplus arrangement above. However, as bees will not work as well in sections, where they can store large quantities of honey below before they commence in the sections, a small brood-chamber is much preferable, even if we do have to go to the trouble of making a special honey-board to keep the queen and pollen out of the sections."

"I think I understand that point now. But why do some colonies store more pollen

than others?"

"Pollen accumulates in the combs only as brood-rearing is not carried on rapidly enough to consume it as fast as it is brought in. For this reason a queenless colony will often have its combs half filled with pollen, while one by its side having a prolific queen will have its combs nearly free from pollen."

"But some colonies carry a lot of pollen

over to the next year, do they not?"

"During the latter part of the season more or less pollen is generally stored, for at this time the rearing of brood is drawing to a close, and nature has so ordained that the bees can have some pollen in early spring before they can secure any from the fields; but the prolificness of the queen has very much to do with these matters at all times of the year."

"Is this or any pollen a food for mature or

emerged bees?'

"Pollen (or bee-bread as it is very often called) is not a food for mature bees to any extent; but it is used largely in compounding the chyle which is fed to the larva or young bee in that form; hence when the bees are breeding largely, as in May, June, and July, large quantities of pollen are consumed."

"How is this used?"

"Pollen, honey, and water are taken into

the stomach of the nurse-bee, and by a process of digestion, or secretion, or both, formed into milk of chyle, which is the only food of the immature bee; and if, from any reason, the supply of honey entirely gives out at such times of prolific brood-rearing, the larvæ are sucked dry by the mature bees, so they (the bees) need not perish; and if the honey-famine still continues, the nurse-bees feed to the mature bees, intead of to larvæ, what chyle they have prepared, so that the life of the colony may be preserved as long as possible, with the hope that honey may again come from the fields before all perish. At no other time have I ever known of mature bees eating pollen. I have starved several colonies in the fall in a vain attempt to make old bees subsist on pollen.

"One more question before I go. A neighbor of mine says pollen and propolis are the

same thing. Is he right?
"No. Their offices are very different. Propolis is a resinous substance gathered by the bees from the buds of trees which secrete or exude it, and is used to stop all cracks in and about the hive not large enough to admit a bee, and to smooth over all uneven surfaces about that part of the hive they come in contact with. It is as different from the farinaceous substance of pollen as glue is from flour, and could in no way be made to take the place of pollen in preparing the food for the larval bees. Your neighbor can be no close student or he would not make any such assertion.



COMB VS. EXTRACTED HONEY.

Comb Honey Requires a Rapid Honey-flow; More Expensive Fixtures, More Labor to Produce; Swarming Controlled More Easily in Colonies Run for Extracted Honey.

BY E. W. ALEXANDER.

Frequently I receive letters from different parties wishing to know which is the more profitable to produce-comb or extracted honey. This, in some respects, is a rather hard question to answer, for much depends not only on the location and season, but also on the man and his methods. Rather than produce extracted honey as some do I should prefer comb honey.

There are many localities where the surplus is gathered so slowly, even in good seasons, that it is almost impossible to produce a nice quality of comb honey. Then there are many seasons, even in good locations, when the surplus comes so unevenly, by un-favorable conditions of the atmosphere, that this, too, to a great extent, prevents the securing of nice comb honey. We all know that, the sooner the sections can be filled and well capped, then removed from the bees, the nicer will the honey appear. Some years ago, in conversation with one

of our principal honey-merchants, he called my attention to a fine lot of comb honey he had just received. Each section was glassed on each side, and the combs were as white as any new comb I ever saw. I don't think the sections could have been on the hive more than ten days. They were so white and free from travel-stains he told me he could sell that honey for 4 cents per lb. more than ordinary honey, on account of its fine

appearance.

A location that will require the whole summer in order that a colony can secure 30 or 40 lbs. of comb honey should never be used to produce honey of that kind, for only a rich harvest with strong colonies and warm nights, so the bees will continue their work in the sections, night and day, will give us choice comb honey, and usually it is rather hard to have these requirements all at the same time; and if either is lacking, then we have a surplus of poor quality and a large number of unfinished sections.

Then there is the expense connected with comb honey, which we must consider. is no small item in large apiaries. I hardly know just what it would be now, as it is a long time since I produced comb honey. But when I did, it cost me at least 2 cents per lb. for the necessary sections, comb foundation, glass, and crates. Then the freight charges were high, and frequently the honey got badly damaged in transit; and the worst of all was the uncertainty of securing much surplus. Then when I got the net returns from the commission men, and found they were only 10 or 12 cents per lb., with still another discount to be made of 2 cents per lb. or over for supplies, I gave up the production of comb honey in disgust.

The desire to swarm is hard to overcome in producing comb honey—much more so than with extracted. It is much handier to make increase, rear queens, or form nuclei in running an apiary for extracted honey, for I think these all require some brood when started, which never should be taken from a colony at work in sections, for it soon reduces their working force and causes them to be somewhat discouraged. This can be easily proven by removing their brood and putting in its place combs partly filled with

Now, the question of labor is one we must consider. From our past experience we find, from the time sections, crates, comb foundation, separators, and glass are received from the manufacturer until the comb honey is sold, it has required far more labor than it would to produce a given amount of extracted honey. Whichever you produce, I consider it of as much importance to prepare your bees well in the spring for the summer

harvest as it is to prepare them in the summer for the long cold winters of the

North.

In the above I have briefly called your attention to a few of the many troubles in producing choice comb honey. With extracted honey it in many ways is so different that it is almost like another business. We have the whole spring season to rear young queens, make increase, and build them up into strong colonies; and although when the harvest comes there may be some still weak in bees, we know that they will give us some surplus, even though the season is a poor one, and the harvest is strung along all summer with only now and then a good honey day.

As soon as a colony is strong enough in bees, and is full of brood and honey, all that is necessary to do is to put on top a hive of empty combs with a queen-excluder between; and if you want them to commence storing honey above, at once exchange an empty comb from your upper hive for a comb of

brood from below.

Some prefer shallow combs to extract from; others prefer combs of the same size as those below, and use one or two combs less in their extracting-supers. We prefer all combs in the apiary to be of the same size, and use the same number in the extracting-super as in the main hive. This gives more comb surface, so the honey will evaporate much faster than in thick combs.

Here is one of the principal reasons why we are never troubled with thin honey. A strong full colony that has plenty of room to spread out their honey and keep it hot night and

day will thicken it very fast.

Storage-tanks are very important in producing extracted honey of fine quality. After it is strained into them there will be a little scum rise to the top, which can easily be skimmed off, and never should be allowed to go with the honey. Then it is easy to draw off the thick honey from the bottom, which gives you the very best quality that can be produced.

Comb honey is rather unfortunate in many ways. It is used only for table use, and here it has to compete with nearly all kinds of fruit, maple syrup, and a small per cent of extracted honey. But not so with extracted. There is a growing demand at nearly all times of the year for it. This is used mostly

for manufacturing purposes.

As to the amount of comb or extracted honey that an apiary can be made to produce this is well worth considering. Some good bee-keepers estimate 2lbs. of extracted for one of comb. We are sure we could never secure more than one third as much comb as we do extracted, even though it cost far more labor.

Still another thing I like about producing extracted honey is that, as soon as the harvest is over, the work in the apiary is nearly done, except putting the bees in their win-

ter quarters.

In the above I have tried to show both sides of the question to the best of my ability, and I leave you to answer your own

question as to which is the more profitable to produce—comb or extracted honey.

Delanson, N. Y.

[Our correspondent has quite fairly set forth the advantages and disadvantages in the production of either comb or extracted honey. Very much will depend on the locality and the markets. In the production of dark amber or other mediam-grade honeys, extracted should be the object. For the very small bee-keeper who does not care to go beyond the investment of four or five hives, the production of comb honey should be recommended, especially if he is in a white-clover district. It does not ordinarily pay a bee-keeper of four or five colonies to buy an extractor; but he can run as for extracted and sell chunk or bulk honey among his neighbors.—Ed.]

REPORTING THE HONEY MARKETS.

Some Honest Commission Men.

BY THOMAS C. KINCADE.

I notice the article on page 597 on "The Reporting of the Honey Markets." I do not think any of the writers improved on your proposed heading; in fact, if you adopted some of their suggestions your heading would be very misleading. Now, Messrs. H. & S., of New York, state that, where sales are made to the merchants direct, freight, commission, and cartage charges are eliminated; but such is not the case. Bills of sale here in my desk from The Fred W. Muth Co. show that freight and cartage charges are deducted from sales or proceeds.

Mr. Pouder thinks the cash buyers could handle all of the honey; but he neglects to

add, at their prices.

The latter part of March, this year, I sent out samples (to the cash buyers or merchants) of new honey, having five or six barrels to dispose of. The best offer I could get was 5 cts. per lb. delivered. None of the prices suited me or compared favorably with the market prices, so I shipped to a commission house in Missouri which is no stranger to me and which is perfectly reliable in spite of the fact that they are commission men. They acknowledged the receipt of the honey, stating condition (good) immediately on arrival, and promising prompt attention. Within a very short while they sent me account sales and k. The honey was sold for 6½ cts. per The weights were perfect. The cartage check. was a third or more less than that of the cash buyers. I, of course, paid 5 per cent commission and a slight charge for insurance and freight. You can tell without figures whether the commission man profited me.

Another commission man with whom I have dealt is a perfect gentleman. I sold him over 20 bbls. of honey last year, of 600 lbs.

each, net.

I never try to influence one man by another's prices; in fact, he may not know I have another man's prices. When I have five or

six barrels to sell I send out samples and sell where I get best offer from reliable party. I put emphasis on "reliable party." Last year I sold six barrels to a cash buyer in the South. He ordered me to ship it to him at Louisville, Ky. I did so, but he did not accept the honey there for some reason which he never explained. They never wrote me. A commission man finally took it off my hands, but I had to pay double freight. Caution is necessary with cash buyers as well as with commission men.

I suppose there must be some bad commission men or so many would not say there are; but I believe that, if the commission men are all eliminated from dealing in honey, the producer will receive a blow that he will feel

for quite a while.

This is the most important subject of any to the ordinary bee-keeper, and I greatly admire your desire to give all a square deal in this matter as well as in others. I shall watch closely for future articles on this subject. If people get better posted they will not go to town and sell honey two or three cents under the market price, as Charles MacCulloch says they do. Please keep this subject humming until it reaches the country men.

Sterling, Ark., May 6.

[While it is possibly true that commission men as a class are not all that they ought to be in a business way, we believe (and have before stated) that those who quote on the honey markets in this journal are honest and reliable. It is true we have received some complaints at times, and in some cases the commission men have been at fault, and in others the trouble lies clearly at the door of the bee-keeper. We believe that the most of our men in the Honey Column belong to the class described by our correspondent.

The trouble is, we don't hear about the good deals; but if there is the least dissatisfaction we hear about it at once. Where there are a hundred good sales made to one bad one, the latter is the only one that is talked about, and it is talked so much that one easily assumes that all others are like it. While it is true that there are some bad corporations and some bad honey-men, it does by no means follow that all are. There is too much wholesale condemning these days. It would indeed be a sorry day for producers if all commission business would be outlawed.

Now having said this much in defense of the commission men who quote in our columns, let us give a letter of an unsatisfactory deal with one of these same men. We give

the letter without name. - ED.]

Dear Sir:—While the subject of commission houses is up in GLEANINGS, perhaps the enclosed statement just received from one of vour regular advertisers and price-quoters might be of interest to you. Note the time of shipment, 1903, and settlement, 1907; commission nearly ½ of what they claim the honey sold for. I marked 19 cases of this honey "fancy;" the rest A No. 1, and I think I was fair in grading. You will see by the weight they give that the sections were well filled, as they were in ideal sections. I made the weight 47 lbs. more than they do. I don't think they have quoted the price of this grade of honey less than 13 cts. since I sent this shipment. The freight was prepaid on this shipment. Is not the small producer

who occasionally sends them honey almost at their mercy?

D. J. Hills.

Mr. D. J. Hills:—We have your kind favor of the 13th inst., and are pleased to hear from you, and you would have had an earlier reply; but the writer has been absent from this city, and found your letter awaiting a reply, which we gladly give you. Yes, it is time. Your shipment can now be closed up, and the result is as follows:

1903, Dec. 11. received 36 cases of honey, 812 lbs. 4 oz.
Sales, 36 cases, 812 lbs. 4 oz. \$82.70
Charges—
Commission, storage, and insurance. 19.08

[While the letter of the commission firm furnished us by Mr. Hills does not prove dishonesty, yet if the facts are correctly stated it does reveal a degree of neglect or carelessness that should not be allowed in a first-class house. We have had some dealings with these people, and we believe they mean to do the right thing generally. But it should not take three and a half years to dispose of 36 cases of honey, providing it is A No. 1, the most of it. Such honey, any time, should be disposed of inside of 90 days at the outside. The experience of commission men, and our own as well, shows that a fancy or No. 1 honey will move off quickly (if producer does not ask too high a price) while No. 2 and off grades go slowly. Possibly this commission house might aver that this honey was not A No. 1, as claimed by Mr. Hills.

We have seen a number of instances where there was a dispute as to the grade. Where the matter has been referred to us we have sometimes had to decide in favor of the city man and sometimes for the bee-keeper. We have seen several lots of comb honey classed as No. 1 that absolutely had not even been graded, the entire crop being mixed indiscriminately in the cases except that the No. 1 and fancy sections were put next to the glass. This policy is exceedingly reprehensible. Dissatisfaction on both sides is inevitable. One accuses the other of dishonesty. Nobody gains by it, and, worst of all, the bee-keeper is the heaviest loser; for if the consignee must regrade and repack, he is going to make the other fellow pay for it.

ing to make the other fellow pay for it.

We are not claiming that Mr. Hills did not grade his honey. In view of the fact that that there have been other complaints concerning this company, the presumption is that Mr. Hills is not misstating the facts. If the honey, therefore, was A No. 1, there is no excuse whatever for keeping 19 cases of it from Dec. 11, 1903, till May 29, 1907, before making returns.

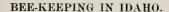
If the honey was kept over three years and then sold, it is a wonder that it brought even 10 cents. Most comb honey kept that length of time would bring hardly one-third

prices.

Mr. Hills draws attention to the charges that amounted to nearly 25 per cent of the gross sales. It is not surprising that the storage should have been a large item in view of the long delay. If the honey had been sold promptly this charge would have been insignificant. Unfortunately the items of com-

mission, storage, and insurance are all lumped together. How is any one to know whether he has been overcharged on any one or all three of these items? The commission itself should not exceed 10 per cent, \$8.27; insurance for three and a half years ought not to exceed \$4.00; but here, again, if the goods had been sold promptly, this would have been an insignificant item. Putting insurance and commission together we have \$12.27, making a net charge of \$6.88, or nearly \$7.00 for storage. This seems to us like a high price, especially if it should develop that this long storage of the honey was not necessary.

We are not disposed to enter into any severe arraignment against this commission house; but we desire to suggest this: That an explanation should be rendered in case goods are held longer than 90 days, stating why sales are not made, giving the producer the option of turning the goods over to some-body else. Certainly in rendering a final account our commission house should have



The Control of Swarming by the Use of an Abundance of Room.

BY E. F. ATWATER.

The apiary illustrated in the cut is the home yard of Mr. T. H. Waale, of Nampa, Idaho, as it appeared during the season of 1905. Partly because of toads, the hives rest on quadruple stands, about 18 high, two hives facing east and two west. The hives are of the eight-frame standard size, with Hoffman frames, and short top-bar projections, end-spaced.

Mr. Waale is remarkably successful in controlling swarming, the queens being allowed the freedom of the entire hive, be it 2, 3, 4, or 5 stories high, with abundant ventilation.

After some experience with horizontal wiring of frames Mr. Waale now wires all his frames vertically, and gets much better

combs by so doing. Being a good mechanic, he makes hisown hives and foundation. Many of the hives illustrated are of red cedar, which does not warp nor check as does pine in this climate. It is especially good for wide single - piece lids.

One George W. Whitcomb, of Washington, has often

told in the American Bee Journal how the blacks were far superior to the Italians for that climate. This assertion is vigorously combatted by Mr. Waale, who was for years a bee-keeping specialist at Sara, Washington, only thirteen miles from Portland. Mr. Waale is the efficient foul-brood inspector for one of our districts.

Meridian, Idaho.



HOME APIARY OF T. H. WAALE, NAMPA, IDAHO.

made such an explanation. In the absence of any explanation their last sentence soliciting further deals is almost adding insult to injury. We desire to suggest that, when thore is a charge for storage and interest, these be itemized and not blanketed in one general charge in connection with the commission.

We hope all our commission houses will see the importance of giving fully itemized statements as well as an explanation for any

unusual delay or low price.

Finally, we are not disposed to condemn the firm whose name is omitted until we can receive from them a full statement. We are introducing the letter here as a sort of object-lesson, and for general discussion; and in this connection we desire to note that some companies do not charge for insurance and storage. Others add to commission freight and drayage. In the charges above enumerated, no account is made for freight and drayage. But these items would be small.—ED.]

RASPBERRY HONEY.

A Report from the Largest Producer of it in the United States.

BY S. D. CHAPMAN.

This photo of my home yard was taken last August. There are 246 colonies in this yard, and my out-yard contained about 150.

For the past 17 years I have been located in the very best of the raspberry belt. During this time I have produced many thousands of pounds more of raspberry honey



HOME APIARY OF S. D. CHAPMAN, THE LARGEST PRODUCER OF RASPBERRY HONEY IN THE UNITED STATES.

than any other bee-keeper in Michigan, and, to the best of my knowledge. more than any other bee-keeper in the United States. Nearly all of my colonies are run for extracted honey. I see that each colony has a young

queen during July in each year.

I send you a photo of my family. They are my helpers in my bee-yards. We believe in a home market for honey; and you can tell by our looks that we consume a large amount of honey for a family of five. We have good health, no doctor's bills to pay, and we try to feel thankful for these blessings.

Mancelona, Mich.

EXTRACTORS.

Brakes for the Two-frame Machines; Steam vs. Gasoline for Power.

BY ROBERT GIBB.

I am using a two-frame reversible extractor, and the thought has often occurred to me that a brake of some sort would be a great advantage. Could you not fit a brake on to the handle similar to our free-wheel backpeddling bicycle brakes? make the handle to run free when not speeding up, and by pushing in the opposite direction put on the brake.

Another idea has struck me. I notice, in some of the last GLEANINGS, illustrations of small gasolineengines for driving extractors. Now, in our district we have cream-separators driven by small steam-turbines with steam generated in small boilers. How would a small turbine do for extractors? All you have to do to start or stop them is to shut on and off the steam; and if a brake were wanted, the steam could be set against the turbine. Steam has many advantages over gasoline-

1. You can start and stop when you like, and regulate

the speed.
2. Heat is necessary while extracting.

3. A small jet of steam could be led into the water for heating the knives.

4. The steam could be led into the lower chamber of the wax-extractor, and that would make wax-rendering easy.

5. Steam has no smell.6. It is cheaper than gas-



S. D. CHAPMAN AND FAMILY, OF MANCELONA, MICH.

oline (in New Zealand), and less dangerous, and when not required it could be used to generate steam for separators on the farm, and driving all sorts of light machinery.

Tuturau, N. Z.

[The use of a brake on the two-frame extractors has been suggested several times, as you may have noticed in Gleanings, pages 487 and 824 for 1905. Our automatic two-frame extractor is so equipped; but so little power is needed, ordinarily, to stop these small machines that any brake would seem superfluous.

As to the steam-engine for driving the honey-extractors, we would say that we considered steam before we did the gasoline-en-

gines, and the greatest objection is because of the first cost of the outfit. Without being well informed as to the pow-er required by your cream-separators we should think this would be very small compared to that required to run a honey-extractor, especially the larger sizes, as most producers who would want power extractors would want them at least of the four-frame size, and more likely the 6 and 8. The amount of steam necessary would then be much greater than that required to run the cream-separators, and it is doubtful whether the small steam-turbines could do the work. We will take up one by one the advantages which you mention of the steam.

As to the starting and stopping, we would say that a gasoline-engine can be allowed to run all the time, the

extractor being started and stopped by means of an idler on a loose belt and by the brake. When the engine runs idle, very little gasoline is used. We have tested this matter out very carefully, and find that nothing could be more satisfactory. When the lever is moved one way the idler tightens the belt, and the extractor starts; when it is moved the other way the idler moves away from the belt and the brake can be applied. See page 699 of the May 15th issue.

As the extracting is ordinarily done in hot weather, heat is not necessary; but if for any reason it becomes necessary to use heat, the exhaust from the gasoline-engine could be used for this purpose in almost every place where steam could be used. It could be used very satisfactorily for heating honey-knives, and with but very little trouble; but

steam, of course, would have the advantage in extracting wax.

When properly used, the gasoline-engine gives almost no smell, or so little that very few would find it any objection.

While steam power might be cheaper than gasoline in New Zealand this would not be true in the great majority of cases. It would be impossible to have an explosion with a gasoline-engine, as there is no fire nor heat in any place except inside the cast-iron cylinder of the engine. Reasonable care should, of course, be used in handling the gasoline when filling the tank.

A gasoline-engine could be used for running any kind of machinery about the farm, and in this it would have the great advan-



A SYMMETRICAL SWARM.

tage of being portable, or more portable than a steam-outlit.—H. H. R.]

A REMARKABLY WELL-SHAPED SWARM.

The swarm shown in the photo may not be extraordinary for size, but it is a good one, and regular in shape. It issued at 8:80 on a cloudy morning. Swarming had evidently been postponed until the last moment; for, while the swarm was out, on examining the hive a young queen was observed to leave her cell. The owner stands at the same distance from the camera, a few inches from swarm, to give an idea of the size.

E. FLEMING.

Victoria, B. C.



FIG. 1.—APIARY OF B. C. VANDALL, IN SUR, MONTERY CO., CAL.

BEE-KEEPING IN CALIFORNIA.

Summit Apiary of B. C. Vandall; Second Growth of Alfalfa in Nevada.

BY SOJOURNER.

Tucked away in the top of a spur of the Coast Range Mountains we find this apiary, facing and looking down upon the waters of the Pacific Ocean, some two thousand feet

below-see Fig. 1. Its owner, now retired from more active pursuits, was once California's representative in its legislature, and a journalist of repute. At eighty years of age he still works with his bees.

In Fig. 2 notice the fineness of the alfalfa

stems which shoot out from the roots. Although not yet in bloom, nor full grown, it averages four feet in length.

This quality of hay is bought at seven and



FIG. 2 - SECOND GROWTH OF ALFALFA IN NEVADA.

eight dollars a ton, and shipped to Kentucky at a cost of twenty dollars a ton, and fed to the Blue-grass State's thoroughbreds. How is that for hay in the West?

Lovelocks, Nevada.

A DEMONSTRATION OF CAUCASIAN BEES.

Advertising at Fairs.

BY FRANK G. ODELL.

The demonstration shown in the accompanying photographs was undertaken to show the extreme gentleness of the Caucasian bees. The time chosen was not propitious, being late in the afternoon of a cool day in the latter part of October, when no bees were flying. The sole purpose of the demonstration, which partook largely of the character of a vaudeville performance, was to show to the spectators that there are bees which may be handled without fear of stings. The operator, from choice, customarily does his apiary work with bare arms, even when working with Italians, so that this part of the specta



FIG. 1.—SCOOPING HANDFULS OF CAUCASIANS OFF THE FRAMES.



FIG. 2.—CAUCASIAN MILLINERY.

cle is not unusual. No preliminary quieting maneuvers were resorted to, as smoke is entirely unnecessary; and as soon as the artist was in readiness with a kodak the first colony handy was opened up and the performance begun by scooping a few handfuls off the frames. These were thrown from one hand to the other like a boy playing ball, until nearly all the bees were on the wing, and the entire cluster was then shaken from the remaining frames on the hat of the operator in order to demonstrate the stylish effect of Caucasian millinery.

By this time the entire colony had been subjected to a pretty vigorous stirring-up with no stings. A good-sized handful was next scooped from the cluster on the hat and thrown in the face of the demonstrator; still no stings. By this time the bees had begun to cluster again on the frames, and a frameful was subjected to the indignity of being blown off the frame by the breath of the operator—a treatment usually resulting in stings if bees will sting at all, but they were still gentle. They were then subjected to a series of shakings, running the fingers through the cluster on the frame, patting them on the back with considerable emphasis, etc.; but, evidently realizing that they were on exhibi-



FIG. 3.—TAKING A HANDFUL OF BEES FROM THE HAT.

tion, they still declined to be provoked into

stinging.

Similar demonstrations were made with a colony of these bees in an exhibition hive in a screened pavilion at the Nebraska State Fair several times daily for an entire week, with a lad of seven years and a little girl of eleven as the demonstrators. During this entire series of exhibitions neither of the young apiarists was stung; and many beekeepers, who were among the spectators, entered the cage and assisted in the demonstrations with much interest. This series of exhibitions attracted much attention, and frequent concern was shown by observers for fear the children would be "stung to death," but, fortunately, no such catastrophe occurred.

The bees used in these experiments are a colony of yellow Caucasians, the term "yellow" being indicative of their lighter color as compared with the dark strains of this race. These bees, when examined closely, show a distinct yellow marking in the light bands, which are much narrower than the corresponding bands on Italian bees. The queens of this strain are dark on the back, with the under part shading into a dark

orange color, being frequently found as light in color as a good leather-colored Italian. Experiments in breeding queens have demonstrated that it is possible to accentuate this tendency toward a lighter color without diminishing the fertility or bodily vigor of the queen, and it is possible that sustained experiments in this direction may develop a strain of yellow Caucasians approximating to five-banded Italians in color, the chief distinction being in the relatively narrower dark and light alternate bands in the markings of the Caucasians.

This possibility in breeding is suggested, not only for the interesting problem in development it affords, but also because of the fact that the Caucasian bee is associated with a hue of inky blackness in the mind of the average bee-keeper. In fact, these bees in the cluster have a marked grayish cast, much like the gray Carniolans, due to the blending of colors. It might be entirely possible to send out samples of gray Carniolans, Caucasians, and Banats, and even an expert be puzzled to distinguish between them, so similar are their markings. The difference is largely one of physical make-up, in slightly differing form and size of body. In handling them in the colony the difference would be



FIG. 4. — THROWING THEM IN THE FACE OF THE OPERATOR.



FIG. 5. — FIVE MINUTES AFTER THE DEMONSTRATION.

more easily discerned, as the Caucasians are not only very quiet on the comb, but quiet down more quickly after being disturbed than any other race of bees within our observation.

In the foregoing demonstration the colony was subjected to every possible test of gentleness under the most trying conditions for some thirty minutes: and within five minutes after the demonstration ceased, nearly all the bees had returned quietly to the hive, as shown by the last photograph of the series.

In a yard devoted entirely to rearing of queens it is difficult to make authoritative tests of honey-production, but the Caucasians here shown made their own stores, while Italians beside them had to be fed, and they have undergone the test of wintering in excellent condition. Our experience with them thus far leads us to be very friendly to these gentle bees. Another point in their favor is the remarkable inherited fertility of the queen. We have repeatedly had young queens mated, and laying in nucleus boxes, in five and six days from the time they were hatched, ten days being exceptionally early for Italian queens under the same conditions. Our experience has also been that a larger percentage of queens are successfully mated than in the case of the other races.

Lincoln, Nebraska.

[We may be mistaken, but it is our opinion that almost any race of bees can be handled in handfuls after they have been demoralized or made to form in the form of a cluster. In our various public exhibitions we have handled all kinds of bees in a large demonstrating-cage, and have scarcely ever received a sting. We are not sure, but we are of the opinion that Cyprians can be handled in that way after they have been shaken into a pan or gotten into the form of a cluster; but it is not every colony whose hive can be opened without smoke. Here is really the crucial test of the temper of bees. The most of our pure Italians and all of our Caucasians will permit of being handled or having their hive opened without smoke, provided it is warm weather and the cover is not glued down so that, when it is loosened, it comes up with a snap. But Mr. Pritchard, at our north yard, says he has noticed that Caucasians are more gentle under untavorable conditions, as in cool or chilly weather, than the Italians under like conditions.-ED. 1

BEES FOR FERTILIZING CUCUMBER-BLOSSOMS.

Some Troubles in Hiving a Swarm; Some Funny Experience.

BY A. T. HARPER.

On the 13th of July, 1905, I purchased a colony of three-banded Italians. At the time I had no intention of going into beekeeping beyond a couple of hives, for, being in the market-garden business, I needed bees to inoculate cucumbers, not having grown above a dozen fruit for the three years previous, and those only by fixing the blossoms by hand, although I always put in lots of plants. I gave ten dollars for the hive, leaving it to the other fellow's sense of honor to give me a good strong swarm. Now for results:

On the 20th of the same month they swarmed, with me rushing round, dressing in almost a suit of mail, almost persuading myself I was going to battle. I will not describe how they settled in a tall willow, or how I was standing on some lower limbs with a basket in one hand and an ax in the other, when the limb broke and deposited me in the brush, ripping the veil off and dumping bees all over me. Suffice it to say, in the scrimmage I lost the queen, or killed her, or something, for I carted bees on sticks and branches, in bunches of one quart upward, and dumped them in front of another hive for over two hours; but still they would not stay in. I sometimes varied the proceedings by blocking the entrance and plunking them in the top, closing the lid quickly; but no sooner did I open it for another lot than the rest were out. Well, they got back to their old home at last, and came out four days later; and as they settled in a more respectable place I captured them, this second swarm

being a very strong one. Again on the 7th of August and the 14th they swarmed. I caught both, ending up the season with four bives

I took away six dollars' worth of honey that fall, mostly from the first swarm captured.

The only place I had to winter them was in our cellar, $9\times9\times6$ feet deep, under the house, no ventilation, and with 50 bushels of potatoes, and also lots of other vegetables such as cabbage, celery, onions, etc. I put them in about the 25th of October, giving them a fly in midwinter, putting them just outside the door one fine day, and putting them in the cellar at night again, and in the spring putting them on their summer stands about the 15th of April—that is, three of them, as I lost one from lack of stores, but not the strong one.

This season, 1906, I have increased them to eleven strong hives, all doing well; but that is not all. This year I sold \$35 worth of honey, and also \$55 worth of cucumbers, besides lots of pumpkins, marrows, etc. Now, here is the funny part: The more I handle the little fellows the more I like them, so fate only knows where it will end. It is just about 16 months since I started with one, and I now have eleven.

Minnedosa, Manitoba.

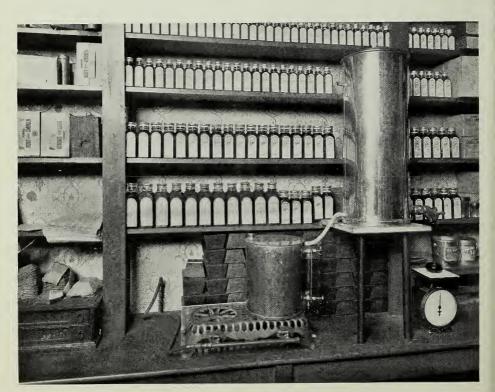
BOTTLING HONEY.

A Coil of Steam-pipe for Keeping the Honey Hot to Prevent Granulation.

BY WALTER S. POUDER.

Feeling the need of a speedier method of bottling extracted honey so that it will not granulate readily, I have been making some experiments and think I have at least improved on all old methods. My old method of filling jars and then placing them in a hot bath till thoroughly heated before sealing was slow, and even at the best there was a lack of the sparkling brilliancy that can be obtained by heating in large quantities where there is a heavy pressure, obtained only in a deep tank. The pressure is an aid to having air-cells rise: and when this is accomplished we retard granulation, and so prevent that soapy appearance that occurs when jars are heated after being filled.

Following my ideas in this line I have a twelve-gallon tank in which I have installed a copper coil of half-inch tubing. This coil represents many feet, and is closely wound near the bottom of the tank, and continues to the top of the tank as shown in the engraving. The tank is 30 inches high and 12 inches across, and is made of copper, nickel-plated. The tubing is tinned. I have a



POUDER'S METHOD OF KEEPING LIQUID HONEY HOT WHILE FILLING BOTTLES.

steam-generator on a gas-stove, which I connect with a rubber tube with the coil; and the steam passing through the coil brings up the temperature very rapidly. I do not use a thermometer at all; but one readily learns to take care of the temperature by simply placing his hand on the side of the tank. If it indicates too much heat we simply turn off the gas. We melt five gallon cans by the usual hot-water method and empty them into the tank through the strainer while hot. By this method we gain much time in heating, and the coil method is then used to keep up the temperature of honey that has been previously heated. My only fear was that the temperature of hot steam would be too high for the honey; but the outfit is giving perfect satisfaction, and we have increased our speed fourfold over old methods.

I have installed the system behind my

counter, where my customers can view it, and it seems to be attractive.

Indianapolis, Ind.

bottling honey. Instead of a nickeled copper tank, one of tin would be almost as good, and much

cheaper.

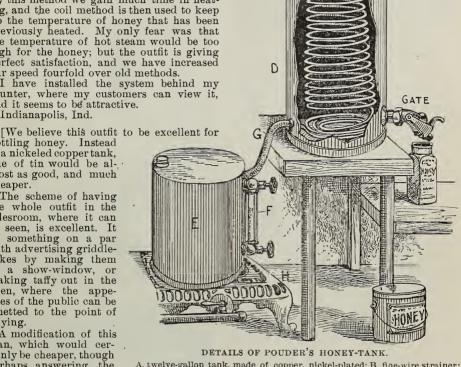
The scheme of having the whole outfit in the salesroom, where it can be seen, is excellent. It something on a par with advertising griddlecakes by making them in a show-window, making taffy out in the open, where the appetites of the public can be whetted to the point of buying.

A modification of this plan, which would certainly be cheaper, though perhaps answering the purpose nearly as well, would be a can within a

can, the space between the two being about half an inch. The outer can should be sev-eral inches deeper than the inner one, the deep space below then containing the water, so that the whole apparatus could be set directly on the stove, thus saving the expense of a separate boiler. Instead of the rather expensive steam-coil, a steam-jacket would thus be substituted, entirely surrounding the inner can containing the honey. A vent should be provided, of course, at the top.

If the temperature of steam proved too high for honey, the outer can could be filled with water, so that the honey would be surrounded by a hot-water jacket, the temperature of which could be kept at any point.

This hot-water plan is used to some extent already, and there is no doubt but that it is an entire success. Is may be even a better method on account of the lower degrees of temperature that may be maintained. Furthermore, the apparatus would be somewhat



A, twelve-gallon tank, made of copper, nickel-plated; B, fine-wire strainer; C, outlet for steam; D, half-inch copper tubing, tinned; E, copper boiler or steam-gen erator; F, glass water-gauge; G, rubber connection; H, gas-stove.

simpler, as no water-gauge would be necessary.—ED.]

A SEASON'S WORK WITH SECTION-AL HIVES.

Swarm Control and Comb-honey Production; Putting Foundation in Sections; a New Method.

BY J. E. HAND.

Perhaps it will be in order at this time to describe our new method of putting foundation in sections. You will see by Fig. 2 that our sections are split & of their length exactly through the center by a circular rip-saw before they are folded. They are then fold-ed, and placed in wide frames with the unsplit side at the bottom of the frame, and the wide frames are placed in supers which are tiered up in the shop until it is time to put

in the foundation. This work is usually performed during rainy days when we can not well work out of doors. Having our sections split and folded, and placed in wide frames when we wish to put the foundation in the sections, the wide frames holding four sec-

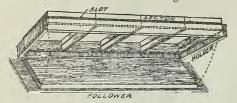


FIG. 1.—FORCING THE FOUR SECTIONS HALF WAY OUT OF THE FRAME TO EXPOSE THE SLOT.

tions is pushed down over a form, Fig. 1, just half as thick as the sections are wide. This exposes the split in the sections. We next insert the thin narrow strip of wood down through the center of the four sections

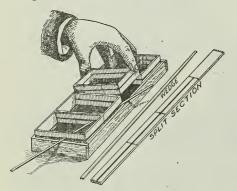


FIG. 2.—SPREADING THE SPLIT SECTIONS WITH THE WEDGE.

from the tops until it rests on the bottom of the sections, Fig. 2. This strip holds the sections open to receive the foundation. We will now drop in our strip of foundation

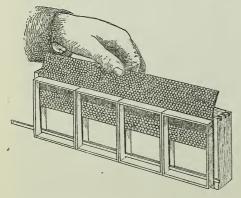


FIG. 3.—INSERTING THE FOUNDATION INTO ALL FOUR SECTIONS AT ONCE.

thin strip of wood that holds the sections open, Fig. 3. We will now pull out the strip of wood endwise, Fig. 4, and give the bottom of the wide frame a good rap on the bench, when the foundation will settle to the bottom of the sections, Fig. 5. With the reverse (which is $4\frac{1}{8} \times 17\frac{1}{8}$ inches) until it strikes the side of the form we will press the four sections back into place in the wide frame, Fig. 6, and then you have four sections perfectly filled with foundation at one operation, Fig. 7. You may throw them on the floor, pile the frames up like cordwood, or haul them to out-apiaries, but the foundation is there to stay.

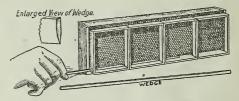


FIG. 4.—WITHDRAWING THE WEDGE.

This method entirely does away with the fussy job of cutting the foundation up into small pieces and then going through the slow process of putting two pieces of foundation in each section with a hot-plate machine; and it avoids the annoyance of having an occasional section of honey spoiled by having the foundation drop out from the weight of the bees. This system is perfect in its operations and results. You can fill four sections with it in less time than you can one with any hot-plate or other method, and it insures a perfect section of honey firmly fastened to

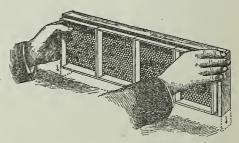


FIG. 5.—SHAKING THE FOUNDATION DOWN INTO PLACE.

the wood on four sides, and practically free from pop-holes. Although this method has never before been given to the public, yet it has long since passed the experimental stage, since we have used it exclusively for three seasons with perfect satisfaction.

In putting in foundation by this method you must have your foundations wide enough to rest on the bottom of the sections and reach up through the section at the top; $4\frac{1}{3}$ is right for four $4\frac{1}{4}$ sections. Don't think that 4×17 is near enough, for it is not. Don't think that it is a fussy job to put in foundation by this method, for a child ten years old can put in foundation faster and

far better than two men can with a hot-plate machine. But, to return to the bees:

An examination at this time shows that every one of the supers is crowded full of bees, and that work in the sections has begun in earnest. Our colonies are all over-



FIG. 6.—FORCING THE SECTIONS BACK INTO THE FRAME AFTER THE WORK IS COMPLETED.

flowing with bees, therefore we will place on each of our 50 comb-honey colonies another section-super of drawn foundation, and also on each one of our extracting-colonies another super of empty extracting-combs, placing all supers next to the brood-chambers, Fig. 8. We are now up with our work, and are right in the beginning of a fine honeyflow from basswood bloom; and whether or not we are going to secure a partial crop of surplus honey from this source will depend entirely upon ourselves and our methods; for any of the methods as practiced by the hon-ey-producer of the average location would result in an entire failure on our part to secure any surplus in such a season as this, for the total amount that our bees will store during this short honey-flow will be only a little more than would be required to carry them through the winter if we allowed them to store it in the brood-chamber, which we do not intend to do, as the difference between basswood honey and sugar syrup for wintering our bees means a profit of about \$400. Just now is the crucial test of our methods. A hitch in any of our methods at this time would mean a loss to us. As we pass along in front of the rows of hives and note how the bees are dropping on the ground and fairly piling up on top of each other we have

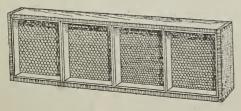


FIG. 7.—THE FINISHED WORK.

a certain feeling of satisfaction that comes from the knowledge that our bees are doing the very best work that they are capable of performing under the most favorable conditions.

There is nothing more for us to do to-day, as there are no swarms to look after; and as

my brother and family are coming to spend the day with us we shall enjoy ourselves the rest of the glorious old Fourth of July. It seems good to have the day all to ourselves, and our memory travels backward into the dim and distant past, and we remember another Fourth of July when we did not have things all our own way with our bees, before we knew how to control swarming or practiced the clipping of queens. Oh the good (?) old days of climbing trees to dizzy heights! On this particular Fourth of July a refractory swarm had clustered high up in the top of a cottonwood-tree. We were younger then than now, so we pulled off our swarming-box on the end of a pole; and after climbing as high as we could we could only just reach the cluster with the box. We gave it a bump, and down came the bees. Down went the box, and down went McGinty. Up went the bees—yes, up our panta-

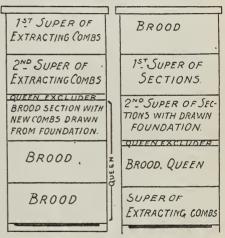


FIG. 8.—DIAGRAM REPRESENTING AN EXTRACTED-HONEY COLONY AND A COMBHONEY COLONY AFTER THE SECOND SUPER HAS BEEN PUT ON.

loons and into our hair. We didn't climb down—we just dropped. Well, if there was any part of our anatomy that was not punctured by a bee-sting we have forgotten where it was. That was the time we were converted to the clipping of queens. Perhaps if you had been within hearing distance about that time you would have entertained serious doubts regarding our conversion along certain other lines. We also remember another Fourth of July, not so far back in the past, when we had somehow neglected to clip our queens. On this Fourth of July we had nine swarms of bees all clustered together in one bunch. Talk about celebrating the glorious Fourth! we did it that day to perfection.

When we compare the past with the present, and while we are having the day all to ourselves, we feel that truly we are beginning to reap the rewards of our labors in solving the problem of perfect swarm con-

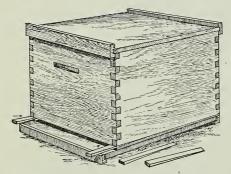
trol in connection with comb-honey production.

To be continued.

LARGE ENTRANCES. Reversible Bottom-boards.

BY ADAM A. CLARKE.

I am greatly interested in the article on p. 157, last year's volume, by E. R. Root, on the importance of deep entrances in the storing season. There is room for improvement in the way these wide entrances are furnished. From the illustration, I notice that the reversible bottom-board is how the large entrance is obtained. Having used the same as illustrated, for many years, I have come to the



CLARKE'S METHOD OF REGULATING THE EN-TRANCE.

conclusion that the reversible bottom-board is a step in the wrong direction, and causes more trouble than it is worth. Bottom ventilation at a time when the bees are very populous, and honey is coming in freely, is of great advantage to the honey-producer, as it tends to lessen the work of the bees; and on days when the mercury is at 100° in the shade, which very often occurs when the flow from white clover is at its best, the bees can keep on with the work in the supers, where, if only the regular entrance is used, the bees will be found on the outside during the greater part of the day, and in many cases this will cause them to prepare to swarm. I might say that I have discarded the reversible bottom-board, and have a plan that gives me more satisfaction than any kind of bottom-board I have yet seen, and I think I have tried them all, the Danzenbaker included, and have adopted the regular bottom-board as sent out years ago. When I want to increase the entrance I pry with a chisel the hive-body in front; then with a strip of shingle, \(\frac{2}{2}\) inch wide by the length, I put one of these between the hive-body and the cleats of the bottom-board. In this way you can raise or lower the entrances to a large number of hives without lifting the hives or discovered the state of turbing the bees; and if it should turn cold for a time these strips are quickly and easily removed. The bottom-board is more easily

leveled than when the outside edge has the cleat on both sides.

I have not given any attention yet to the principal thing connected with this subjectthat is, when the wide entrance is used, and the bees are run for comb honey, I have found that the bees for some reason will not fill the sections in the front row in the su-pers, and I have had this experience for many years. I have had colonies of bees that have filled and completed twelve supers from white clover, but in all cases the front rows in all of them were never completed. I have tried every style of section made, and have tried it with different races of bees, but the results were always the same. I should be glad to be informed whether you have ever had the same experience. I might say that my bees are close to the ground, and that I use bricks for hive-stands, using a loose board for the alighting board as in the illustration; then when I want to run the lawn-mower close to the entrances I first gather these up, laying each one on the top of each hive it belongs to, and return them when the mower has been run along.

Le Mars, Iowa.

[The plan you describe, of deepening the entrance, is much like that recommended by S. T. Pettit, of Canada, some years ago. C. C. Miller goes further by putting a couple of blocks under the two front corners, and sometimes four blocks under all four corners. We are not so sure but that this method is cheaper and more effective, because it gives ventilation at the sides as well as at the ends.

No, we have not observed that those sections over the entrance are not so well filled. If you put a winter case over the super while the honey is storing the trouble should dis-

appear. - ED.]



FUMIGATING COMBS WITH SULPHUR.

What is the correct amount of sulphur to 100 cubic feet of room space for fumigating brood-combs from hives in which the bees have died—the combs containing wax-worms of all sizes? Or, to put the question in another way, how many cubic feet of room space will 1 lb. of sulphur fumigate effectively?

Will the same proportion answer for fumigating comb honey? If not, what should be

I can not find any definite answer to these questions in the A B C of Bee Culture (of 1905), which I have, and deem it of sufficient importance to be incorporated in future editions. I have seen these questions answered

before in the bee-papers; but it was years ago, and I do not now know where to find it, and do not have time to go over all the

files.

I notice that complaint is made about soap on comb foundation. What kind of soap do you use, and how is it prepared for this purpose? Do you put salt in it, and in what proportion? Why do you use soap instead of starch?

WM. MUTH-RASMUSSEN.

Independence, Cal.

[We are turning the question as to the amount of brimstone or sulphur to 100 cubic feet over to those of our readers who possibly and probably have made experiments sufficient to give an exact answer. To use too little sulphur does not accomplish the object. Too much of it will turn the white comb surface yellow. The golden mean is certainly the thing here.

No complaint has been entered against the use of soap in comb foundation except by one bee-keeper, who imagined the bees might object to it. As we have already stated, the amount of soap used in the modern methods of making, where wax is sheeted from continuous rolls, is infinitessimally small. By the old hand process of hand-dipped sheets it is necessary to use a great deal more soap, and it is possible that the amount so used might be objectionable to bees. No salt is

With regard to starch, as we have before pointed out, it is not as good a lubricant as soap. More of it must be used, and the residue left on the sheets of foundation is liable to mildew or spoil. So far as we know, soap is clean, sanitary, and is the universal lubricant used by the large makers of foundation.

—ED.]

A TABULATED REPORT OF SUCCESSFUL CEL-LAR WINTERING.

I give below a report in detail of a very careful and successful test of cellar wintering, just completed. I reckon 400 dead bees to the ounce.

a 15-inch round hole, closed with wire cloth. W. D. KEYES. Blairsville, Pa., March 27, 1907.

PROSPECTORS AMONG BEES.

In regard to bees going out as prospectors (Stray Straws, page 611) I will say that we have observed for years that the bees, when they bring in the first loads of pollen, run over the combs, shaking themselves, and by their peculiar actions communicate to the rest the fact that there is pollen to be gathered. Later, when all are at work they go quietly and deposit it in the comb. In case honey is gathered they give to the bees here and there a little taste. We have often seen these bees, after trying in vain to get a taste of the pollen, or after getting a sip of the honey, rush out after some for themselves. The same thing may be observed by feeding. Binghamton, N. Y. C. W. PHELPS.

CLIPPED QUEENS SUPERSEDED.

Gentlemen:—Last season I purchased five golden Italian queens from different queenbreeders, and was successful in introducing them. Afterward the hives to which goldens were introduced became thoroughly stocked with beautiful golden bees. This spring I noticed quite a difference in the marking of the bees, and decided to examine and find out the trouble. Upon examination I found four out of the five had been superseded. I had clipped the wings of four, and these were the ones missing. They had new queens with full wings. The clipped queens were not lost by swarming. Were they superseded because of being clipped?

Huntingdon, Tenn. STOKER STACY.

[We have had a few reports where, after queens had been clipped, they were superseded; but such cases are few and far between. The difficulty can be avoided in these few cases by clipping the queen while

Hive Number.	Put in the Cellar.	Taken out of Cellar.		Honey consumed.		Number of Dead Bees.		Remarks.
2	Nov. 19. '06 Nov. 19, '06 Nov. 19, '96 Nov. 14, '06	Mar. 21, '07 Mar. 21, '07	4 mos. 2 d's	5 lbs. 5 lbs.	5 3 4 7 19	2000 1200 1600 2800 7600	Good. Good. Good. Good.	Quiet all Winter.

Average honey per hive, 55 lbs. Average honey per month per hive, $1\frac{1}{3}$ lbs. Total number of dead bees, 7600. Average of dead bees per hive, 1900. Range of temperature, 28 to 56 degrees. Average temperature, about 42 degrees.

The cellar was dry, and without any heat; but two-thirds under ground, on the south side of the house, under the living-room, with an outside entrance in the east wall, kept dark all winter, and the cellar door opened occasionally at night; a four to six inch air-space under combs, and a four-inchleaf tray with muslin tacked on the bottom, placed on top of the hives; entrance equal to

she is on the comb, without even touching her except with the scissors. Mr. F. Greiner explained how this can be done some little time ago.—ED.]

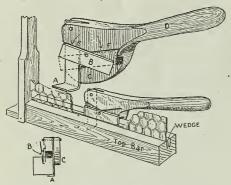
ON THE MOUNTAINS OF CALIFORNIA.

I have phoned to-day to several parties at altitudes 2000 to 4500 feet; April and May, weather cold and foggy; this month, warm; bees doing finely. Some of my colonies have the third super on. A few filled nine-frame E. P. St. John. supers last week.

Alpine, Cal., June 18.

THE DOUBLE-GROOVE-AND-WEDGE PLAN FOR FASTENING FOUNDATION IN FRAMES.

I wish to call your attention to the tool that I have invented for sinking the wedge into the groove in the top-bars when putting in foundation. I think it will do the work it was intended to do, with all ease. You will



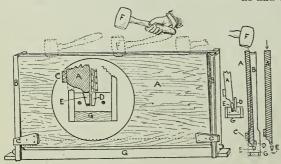
notice the lever with the hook can be made adjustable to any thickness of frame by making two or three holes so as to let the hook down or take it up as desired. Also the side bar that drives the wedge can also have two holes so as to be set lower or higher to fit any frame that would be in use. It can also be made to take different widths of frames.

After the wedge is in the proper place put the press at either end of frame and slide it along to the other end, pushing down on lever with right hand at the same time. The press can be run right up to the end of the frames.

C. H. Flanary.

Dryden, Va.

[We tried one of these tools sent us by our correspondent and found that it worked satisfactorily. But we could not do nearly as fast work as we could with the simple form and mallet which we have used for years, and which any one could make in five minutes. The construction of this is clearly shown in the illustration.



Take a board, A, \(\frac{3}{2} \) inch thick, a trifle shorter than the inside length of the frames, and about \(\frac{1}{2} \) inch wider than the inside width. Sharpen one edge of this as shown in the small detail drawing at the right. Now nail on the two pieces, C C, to rest against the

end-bars, and thus prevent the board from hitting the foundation when in position.

To use, stand the frame upside down, resting on its top-bar. Insert the sheet of foundation in the proper groove, and put the wedge in the other. Put the board in position so that the sharp lower edge rests directly on the top of the wedge. Three raps with a mallet or stick on the top edge of the board drives the wedge down below the surface of the wood, where it should be. The whole operation takes almost no time, and the quality of the work is of the very best.—Ed.]

FIVE-BANDED AND LIGHT-COLORED BEES.

My experience with five-banded or very yellow bees (mentioned on p. 833) has been such that I have not recommended them for northern latitudes; and every queen-breeder of such stock I think ought not to do so. They are not as hardy as the darker races of bees. I have bred queens that were golden in color, and produced bees that were like gold to look upon, but I could not rely upon their wintering successfully when left out of doors.

Brooks D. Cook.

South Lyndeboro, N. H., June 24.

HOW AN UPPER ENTRANCE STOPS CLUSTER-ING OUT AND INCREASES THE HONEY

In Dec. 1st issue, p. 1498, Mr. W. F. Card writes about giving bees an upper entrance. I saw this in Gleanings before, so I thought I would try it, and I did. It helps the bees to cool them off when it gets hot in the summer, and they will not cluster on the outside of the hive in the heat of the day. They will work right on in the super, for I got more honey from those having an upper entrance than from those that had no upper entrance. Altamont, Tenn.

AN UNUSUAL CASE OF COMB-BUILDING.

W. A. Morris, Yonkers, N. Y., reports that he had two Danzenbaker frames of comb in

which the bees started to build from the bottom-bar upward. Is this not an unusual case? He brought them down for me to inspect, and I suggested at the time that they must have had the frames in bottom side up. He responded by showing that the cells were built correctly, and was positive that they were placed in the hive in the correct way. Can you give me any information as to why they did this? The frames contained the usual one-inch strips for starters.

L. W. BOYDEN.

New York.

[Yes, this was a very unusual case; but bees will enter upon all kinds of freaks at times, and this seems to be one of them. Comb-building furnishes a field for an almost unlimited amount of study.—ED.]



Woe unto them that are mighty to drink wine, and men of strength to mingle strong drink; which justify the wicked for a reward, and take away the righteousness of the righteous from him.—ISAIAH 5:22, 23.

Editor McClure, of McClure's Magazine, has been making a thorough investigation of the situation in San Francisco. Below I have made an extract of his report to a representative of the San Francisco Evening Bulletin:

What you've done here is to lay bare the exact mechanism that's revolving every American city, big or little. It's the use of politics to increase and protect vice, and it's the canker of every community in the country—a little more severe here, perhaps, but much the same everywhere. Here we have a mayor who is merely a creature of ward politics, and councilmen who represent nothing but the saloon.

May the Lord be praised that we have at least one editor at the head of a great magazine who has the courage to speak out and tell us the truth. If San Francisco were the only city in the United States of which this is true, it would be sad; but the conviction is forcing itself upon us that almost every city of any consequence, and many of our towns, even the small ones, are dominated by whisky rule. Of course, desperate efforts have been made to break away from the thralldom of this evil. We have been told through our magazines of the "shameful" work that has been going on in this or that city, and it has been brought to light and held up to the view of the people at large; and we supposed a new order of things was about to be put in force. But the reform, we are sadly forced to acknowledge, has been only transient. The brewers with their millions have subverted justice, and it is a question just now whether even "prohibition Kansas" is going to succeed in enforcing the law and banishing the brewers and their wares from her domain. May God help us in this terrible and unceasing conflict. We have great men and good men, and we have a God-fearing President—one who seems more fearless, perhaps, than any other we have ever had. But as I dictate these words on this second day of July it seems to me almost a question as to whether Roosevelt, even with the United States of America back of him, is going to make the richest man in the world stand up and testify, or go to jail Perhaps I am extreme; but it seems to me just now that no other object-lesson can be so helpful to our great republic as to see a multi-millionaire go to jail unless he obeys our laws strictly to the very letter, exactly as any common day laborer should be made to do.

It is well known, at least here in our own part of Ohio, that our neighboring city of Toledo is now and has been under the domination of the saloon for years past. When

McClure was speaking of the mayor of San Francisco I could not help wondering how many mayors of our large cities were more or less guilty in a way similar to what the mayor of San Francisco is.

Rev. D. T. Robertson, of the East Side Presbyterian Church, Toledo, O., came out with a sermon on Sunday, June 30, that is stirring that city. From a report of this sermon in the Cleveland *Leader* of July 1 I take

the following:

"There have been some things thrown at me on account of giving the stamp of respectability to the spy system; but I quote President Roosevelt as saying that 90 per cent of the most dangerous criminals could be brought to justice only through some such system. No one ever saw a rogue who felt the halter tighten about his neck but had complaint about the law and those who brought him to justice. The Board of Public Safety says we must have more police. I should like to know where are the 113 we have. I walked one night for five hours, and never came across one. The policemen seem to be in evidence only on pay day and election time. Mr. Tonson, of the Service Board, says the all-night and Sunday saloon is responsible for the present conditions in this city, and cites an instance of saloon violation of the law. There are dozens of them doing business in direct violation of the law. I was at the interurban station on Sunday, and saw an officer standing in front of a Superior Street saloon. He had to sidestep in order to let in four men who entered the front door of the place."

And again:

"I have seen the red-light districts of Chicago, New York. and Pittsburg. but for its size Toledo has the most freely patronized, most hideous, and lowest colony of segregated vice. Evil is openly flaunted, and vice hangs out its sign under the eyes and seeming protection of the police."

There is one special point in the above which I wish to touch on, and the minister has given us a most remarkable illustration -namely, that when a rogue begins to feel the halter tighten about his neck he complains of the way in which they succeeded in getting hold of him and bringing him to justice. The Anti-saloon League has been most severely criticised—yes, and by good Christian people—because they have employed detectives or "spies;" and when the Christian man or minister of the gospel goes into these low dives as a spy, some good people (or, at least, some who pretend to be good) hold up their hands in holy horror. Well, my friends, I do not like the detective and the spy business. May God help me if I shall ever be called on to do such work. What little work I have already done along that line has been only after most thorough and earnest prayer in my own closet that God would help me to do my duty, even though it be repugnant to all my better feelings. I dislike war also; but, dear Christian friends, I am led to feel that we had better have war, and have it right speedily, than to continue letting our children be led astray and ruined by the blind tigers and other tigers that go about claiming to be under the patronage and direction of our civil law. The liquor papers are now very busy criticising the "spy" business, even though our President tells us that 90 per cent of our most dangerous criminals would go on unharmed did we not resort to spies and detectives. The officer or policeman who stepped aside to let the law-breaker enter a saloon, was

doing only what I fear policemen are doing everywhere all over our land. May God help us in our efforts to secure some police who love righteousness and hate iniquity instead of those who love iniquity and hate righteousness. Mayor Whitlock, of Toledo, excused himself for not keeping his oath of office by saying, quoting again from Dr. Robertson,

"that the people of Toledo desired a wide-open city; and as he was chosen by the majority of the people he let the people have what they wanted."

Now, friends, are we going to elect mayors who keep their oath of office? or shall we continue to elect men who will "let the people "have what they want? It is quite evident that Mayor Whitlock is better posted in regard to what the slums want, because his acquaintance is much closer with them than with the Christian people and the God-fearing fathers and mothers of the city. minister in his sermon alluded to the fact that they shut down on firecrackers, but left

the saloons all wide open.

Day before yesterday was "stainless-flag Sunday," and a plan was arranged, although I do not know how far it has been carried out between the pastors of all our churches in Ohio, to present the matter of the stainless flag and have the pamphlets distributed. This stainless-flag address strikes right at the very root of the trouble in all our cities; and yet there are quite a good many good Christian people who object to temperance sermons; and if it is announced beforehand they will stay away from church. I fear that such is the case even in prohibition Medina; and I am afraid that that is more or less the case in all our churches. If the Christian people would only stand together unitedly, and demand emancipation from the rum power, or, in other words, a stainless flag, a great wave of righteousness and honesty andtruth would sweep over our land. Yes, I know it is coming already; but these words I dictate after prayerful consideration of the subject are uttered in the hope that the day may be hastened. If it must come with bloodshed, as did the extinction of slavery, may God hasten the time; and if the blood that is coursing in my veins is needed to protect the children of the coming generation, I am ready to be a martyr to the cause. Our periodicals and newspapers exert a great influence in this coming conflict; but it does not rest alone with the editors as to what the outcome will be.

With our telephones and cheap postage, especially since our free rural delivery, it is an easy matter for every man and woman to be heard. Whenever a considerable number of people protest to the editor because he has given place to something encouraging to a low standing of morals, he will begin to be a

little more careful.

See the following from the Home Herald for June 12:

There are more than seventy books, which, on the score of their contents, can not be carried in the United States mail. Tolstoi's "Kreutzer Sonata" and all of Zola's works are among them. An attempt is now being made by the W. C. T. U. to eliminate from the mails "books in which the hero, beroine, or any character presented as worthy of admiration is pictured as an habitual user of liquors and cigarettes without condemnation of such habits."

Now, if there is any thing I can do to help the W. C. T. U. in the above undertaking I am ready to act. Furthermore, I want to put in a plea to eliminate from the mails all magazines that uphold the use of cigarettes and the habitual use of liquors in their stories as something for boys and girls to aspire to - that is, giving place to stories that mention these things, as the W. C. T. U. expresses it, without condemnation of such habits.'

Immediately after the above came out, several periodicals ridiculed the idea; and I was especially pained to see the paper that calls itself the *National Woman's Daily* make light of it and speak sneeringly of Lucy Page Gaston and her zeal in conducting the anticigarette campaign. Just think of it. friends —a periodical styling itself the Woman's Daily casting ridicule on those who are spending their lives to protect our boys from the blighting influence of cigarettes! See the following from their issue of July 1:

It should be understood that the Woman's Christian Temperance Union war is on tobacco as well as on liquor. . . Beyond all doubt, Lucy Page Gaston and her followers, if she has any in this crusade for a smokeless literature, mean well, but it is going to be a very difficult thing to create a literature without smoke. . Meaning no offense, we still venture to

The way this same daily is severely denouncing the postal department of the United States and our government reminds me of what the minister said of transgressors when they begin to feel the "halter" tightening about their necks.

Dear friends, I did not intend to make this Home paper altogether a sad one. The Sunday School Times for April 30 gave a whole page of protests against the cigarette business, and from that page I copy the following:

PITTSBURGH RAILWAYS COMPANY.

NOTICE TO EMPLOYEES.

April 20, 1907. For the betterment of the service and the safety of the public, it will from this date be the policy of this Company to NOT retain in its employ men who use in-Company to NOT retain in its employ men who use introvicating liquors or eigarettes, or are in the habit of gambling. While it is the privilege of each individual to eat, drink, and smoke what he pleases, it becomes the duty of this management to have in its service only men of sober and temperate habits, PHYSICALLY and mentally able to perform the duties to which they may be assigned.

Approved: James D. Callery, Pres. JOHN MURPHY Gen'l Superintendent.

When this notice was posted at the barns of the Pittsburgh Railways Company, the *The Sunday School Times* asked Superintendent Murphy his reasons for issuing the order. Here is his convincing reply:

Being an officer of a company that carries—and of course is responsible for the safety of—over two hundred and twenty-five million people per year, it becomes my moral and legal as well as my public duty to use all reasonable means to protect the lives and further the comfort of this large number of passengers. Having for some time back noticed that our action to the component of the passengers are not provided to the care of the component of the component of the component of the care of the c gers. Having for some time back noticed that our ac-cidents were increasing, upon investigating the cause I satisfied myself that the standard of our men who did not use liquor or tobacco (the latter in the form of eigarettes) was much above that of those who used either. I therefore deemed it my duty to abate the evil so far as lay in my power to do so, and tried to uproot it and east it out through discipline, but found this method inadequate and ineffectual. I then went fur her, and concluded the desired end could be attained only by removing from the service or refraining rom employing all men addicted to the objectionable habits alluded to.

It is my aim and intention to pursue this policy without abatement, since I have by it proved beyond all doubt that it has raised the standard of our men. I have been criticised for the stringency of the order, especially the prohibition of the use of cigarettes; but on the other hand I have the assurance of our division superintendents (of which we have twelve), aided by my own observations, that persons addicted to the use of cigarettes, especially young men, are the most careless in their duties and less able to perform them than men using liquor in moderation. I may also than men using liquor in moderation. I may also mention that in seventeen years' experience as manag-er of public-utility corporations I have had occasion to promote many of our men from the rank of conductors and motormen to officers, and in no case has a man using whisky come up to the requirements.

JOHN MURPHY,

General Superintendent.

May God be praised for the stand against cigarettes and intoxicants that a railway company in at least one great city in our

land has taken.

In conclusion I want to copy a little tract sent out by A. F. Cowles, of Towanda, Pa. I have alluded to this brother's work before. Let me say again that he gives his time and money toward sending out, free of charge, these little tracts wherever he thinks they will do any good. This one I copy is one of them. If you would like to help him and encourage him in the work whereunto God has called him, just send him some postagestamps. I assure you he will make good use of them.

OTHERS MAY! YOU CAN NOT!

If God has called you to be really like Jesus he will draw you into a life of crucifixion and humility, and put upon you such demands of obedience that you will not be able to follow other people, or measure yourself by other Christians, and in many ways he will seem to let other good people do things which he will

seem to let other good people do things which he will not let you do.

Other Christians, and ministers who seem very religious and useful, may push themselves, pull wires, and work schemes to carry out their plans, but you can not do it; and if you attempt it you will meet with such failure and rebuke from the Lord as to make you

Others may boast of themselves, of their work, and their writings, but the Holy of their successes and their writings, but the Holy Spirit will not allow you to do any such thing; and if you begin it he will lead you into some deep mortifi-cation that will make you despise yourself and all

your good works.

Others may be allowed to succeed in making money, or may have a legacy left to them; but it is likely that God will keep you poor because he wants you to have something far better than gold—namely, a helpless dependence upon him, that he may have the privilege of supplying your needs day by day out of an unseen

of supplying your nectus as by as a streasury.

The Lord may let others be honored and put forward, and keep you hidden in obscurity, because he wants to produce some choice fragrant fruit for his coming glory, which can be produced only in the shade. He may let others be great, but keep you small. He may let others do a work for him, and get the credit of it; but he will make you work and toil on without knowing how much you are doing; and then to make your work still more precious he may let others get credit for the work which you have done, and thus make your reward ten times greater when Jesus thus make your reward ten times greater when Jesus comes.

The Holy Spirit will put a strict watch over you with a jealous love, and will rebuke you for little words and feelings, or for wasting your time, which other Christians never feel distressed over. So, make up your mind that God is an infinite sovereign, and has a right to do as he pleases with his own. He may

not explain to you a thousand things which puzzle your reason in his dealings with you; but if you absolutely sell yourself to be his love-slave he will wrap you up in a jealous love, and bestow upon you many blessings which come only to those who are in the in-

Settle it for ever, then, that you are to deal directly with the Holy Spirit, and that he is to have the priviwith the Holy Spirit, and that he is to have the privi-lege of tying your tongue or chaining your hand or closing your eyes in a way that he does not seem to use with others. Now, when you are so possessed by the living God that you are, in your secret heart, de-lighted and pleased over this peculiar, personal, pri-vate, jealous guardianship and management of the Holy Spirit over your life you will have found the ves-tibule of heaven.—Living Waters.

Lord Jesus, make thyself to me A living, bright reality, More present to faith's vision keen Than any earthly object seen— More dear, more intimately nigh Than e'en the dearest earthly tie.



PURE AIR COSTS MONEY.

We have become so much accustomed to the expression, "as free as air," that some of you may be surprised when I explain to you that good air is not so very free after all. An expert in the business of warming school buildings and churches recently said to me that it is a fact that people might sometimes save almost half of their fuel by making their homes or public buildings so nearly air-tight that they would breathe the same air over again. He said the most serious obstacle in the way of furnishing pure air in winter, with a comfortable temperature, is that not only individuals but directors of schools and churches say they can not afford the additional expense of *fuel* where fresh air is being constantly brought in from outdoors. T. B. Terry, in considering this very matter, has arranged to let the cold air come first into a room; then it is taken from this room to the apartments where it is needed, after being warmed up. A strong wind will greatly increase the amount of outdoor air, especially when it blows directly into the open-air passage. For instance, if your opening is on the northwest side of the house, under a porch, for example, unless some precaution is taken to prevent a strong northwest wind from blowing straight into this opening you would have ventilation with a vengeance in zero weather; and it would take lots of fuel to warm up that volume of zero air, unless slides are arranged or there is a window to be opened or closed according to the weath-But it takes much supervision to keep regulating this open-air passage. I think likely a thermostat could be arranged, but I have never heard of one being used for this purpose. They are in very common use in regulating the ventilators of greenhouses; and florists are always in the habit of opening the ventilators to let in air in the side opposite from which the wind blows.

Now, I presume it is next to impossible to get pure air without an additional expense for fuel, and especially in many homes in the North. But, dear friends, which is most important—a little saving in fuel or a saving in doctors' bills besides the chances and inconvenience (if you will pardon the expression) of sickness and death? Well, there is another remedy, or another outlet, if you choose, but it may cost money, also, to most of us. You can go to Florida, or some similar place, during the winter time, where the outdoor air has a comfortable temperature, and is always, or pretty nearly so, literally "as free as air." And this is one reason why I have decided to pass my winters - the remaining ones that I may be permitted to live—in a climate where I can have pure air without stint or cost, aside from the expense of getting there and back again. More than all, as I have hinted before, I want to be where I can exercise every day outdoors in God's pure air and sunshine, without being cumbered with an overcoat, mittens, etc. Young people may stand it, passing a great part of their lives in close rooms where we must (or a great lot of us, at least), breathe the same air over and over again. But elderly people, with few exceptions, can not stand this continued strain on their vitality. Therefore, let us ventilate, even if it does cost some money. And along the same line I would say to those who can manage it, let us "migrate," even if it does cost some money. Just one more thing: Outdoor air is not always pure and invigorating. In my home here in Medina a great deal of the time the air is more or less impregnated with coal smoke - smoke from our own factory chimney, and the smoke from two railroads that cross each other close to our home. I am pretty well satisfied that my health is impaired by being obliged to breathe a smoky atmosphere. Perhaps the smoke from burning wood would do but little harm. Smoke from burning coal, either hard or soft, is certainly injurious to my digestion; and I am forced to think this is one reason why my health is invariably better, either in North-ern Michigan or down in Florida. Of course, one must remain several weeks or months in any particular locality to be sure that such locality is a more favorable one for that par-ticular person. We earnestly hope the time will soon come when smoke-consuming devices will be used, not only in all our factories, but in dwellings and on railroads as well.

THE GREAT WHITE PLAGUE AND FRESH AIR.

A distinguished physician, Dr. Baker, says in an address to tubercular patients:

It is an outrageous shame that so many people die needlessly of tuberculosis. Tuberculosis is generally nothing short of suicide. People coop themselves up in the stuffy, vitiated air of living-rooms all day and night, and then wonder why the "white plague" slow-ly chokes them to death. Get out into the fresh air that God gave you. You have no excuse for breathing poison when for a few dollars modern devices make it possible to fill your lungs with the breath of life.



ONE THOUSAND DOLLARS FOR ONE LEAF OF A SINGLE PLANT; THE NEW THORNLESS OPUNTIA; SOMETHING THAT BELONGS UN-DER THE HEAD OF "HIGH-PRESSURE GAR-DENING," THIS TIME FOR SURE.

Luther Burbank has just sent out a new descriptive catalog of opuntias, or what has been called "prickly pear" by the women who have had them for years as houseplants. While I was down in Florida the opuntias were a bad weed in my garden. There is a great variety of them, and they are found all over the island. When they are in bloom they make the ground look yellow, and the bees work on them to some extent. Not all bear fruit, however. At one time when we were out of fruit I picked a little pailful from a single plant I found out in the woods. On account of the thorns the only way we could eat them was to stick a fork through them and peel them with a sharp knife. While in South Dakota I had one of my pleasant surprises in finding a prickly pear that grew outdoors, and wintered over safely in the open air, or in a locality where it is sometimes 30 to 40 degrees below zero. I found a similar opuntia out in the fields in the Black Hills last fall. Burbank's catalog gives us some very important information in regard to opuntias through-out the world. For instance, what do you think of the following statement which I copy from page 3?

The fruits of these and the thorny ones have long been used extensively as food, and are the principal source of food for millions of human beings for about three months in each year.

Also the following one from page 4?

The small, hard, wild thorny cactus has been a common every-day food for horses, camels, mules, oxen, growing and beef stock, dairy cows, pigs, and poutry for more than fifty years. Though millions have died froom the thorns, yet no systematic work for their improvement had been taken up until some fifteen years ago. You who have never had experience with

the thorns should read the following, page 5:

Though the wild cactus is generally prepared for stock by singeing the thorns with fire, yet this never destroys the numerous bundles of innumerable needles imbedded in the leaves, and can not always remove even all of the larger thorns. Those who have fed the wild cactus extensively, acknowledge that cattle are often seen with blood dripping from their mouths, and that their throats and tongues become at last inflamed, very painful, and hard like a piece of sole leather.

The wild, thorny cactus is and always must be more or less a pest. Millions of cattle, sheep, goats, hogs, ostriches, and other animals have been destroyed by it. The best newer thornless ones will withstand frost, flood, drouth, heat, wind, and poor soil as well as the wild ones, and will produce ten tons of fairly good food where the average wild ones will produce the protocol food where the average wild ones will produce

one ton of poor food.

In regard to the ease of culture, see this

extract from page 7:

Everybody knows that Baldwin apples, Bartlett pears, and our favorite peaches, plums, and cherries, can not be raised from seeds: just the same laws hold true with the improved opuntias, but fortunately they can be raised from cuttings in any quantity with the utmost ease—more truly they raise themselves, for when broken from the parent plant, the cuttings attend to the rooting without further attention, whether allarted wight and we better up sidewises read at planted right end up, bottom up, sidewise, or not at

all.

During June, July, August, and September they will thrive under almost any treatment; the leaves, blossoms, buds, half-grown fruits, or any part of the plant, will make root and grow, even on the floor back of a cook-stove, in the pocket of your winter overcoat, or on your writing-desk.

The opuntias differ from nearly all other plants, as the cuttings must first be wilted before they will grow, after which nothing grows so readily. When received, place them in some warm sunny place and allow them to remain a week or more, after which they will readily form roots and start to grow anywhere, even on a ily form roots and start to grow anywhere, even on a board, a pile of rocks, or the roof of a house if you choose. When wilted, the usual way is to plant so that about one-third of the cutting is below the soil. They may be planted in an upright position, or at any angle from the perpendicular—it makes no difference to the opuntias

In regard to the quality and uses of the fruit, I extract the following from page 8:

The fresh fruit of the improved varieties is unique in form and color, superior to the banana in flavor, and is usually sold at the same price per box as oranges, and can be produced at perhaps one-half the expense of producing oranges, apricots, grapes, plums, or peaches, as there is never a failure in the crop, which can be shipped as safely as the other deciduous

The juice from the fruits of the crimson varieties is used for coloring ices, jelly, and confectionery.

Now, there are great numbers of more or less well-known cacti advertised in the way of cuttings, at a price within the reach of almost everybody. There are, perhaps, a dozen new creations, some of them that produce "slabs," as the large leaves are called, two feet long and a foot or less wide. Some of these produce large luscious fruits entirely thornless. The most promising one, Santa Rosa, is valued at \$10,000 — for the complete stock. Here is what we read on page 15 concerning the sale of a single leaf:

One leaf of this, with the right to sell in the Southern Hemisphere, including all of Africa, has been sold to Mr. John M. Rutland, of Melbourne, Australia, for one thousand dollars.

In regard to the fruiting of some of these new creations, see the following from p. 25. It is the title of a cut showing a leaf.

One leaf of improved spineless opuntia, bearing thirty-two ripe fruits which, without the leaf, weighed seven pounds.

The whole catalog is a good-sized book of 28 pages. As nearly as I can gather, it will be mailed on application by addressing Luther Burbank, Santa Rosa, Cal.

SWEET CLOVER IN THE SOUTHERN STATES.

Since it is beginning to be generally acknowledged, wherever sweet clover grows, that it is one of the best, if not the very best, means of introducing the bacteria so necessary for growing alfalfa and other legumes, a new interest has sprung up in sweet clover. Below is a report clipped from the Rural New-Yorker in regard to the plant in Mississippi:

In your issue of April 25 a Pennsylvania correspondent has a good word in behalf of melilotus. This plant in the North and West is usually regarded as a weed.

In the South the white-flowered variety is regarded with much favor as a forage plant, and also for grazing. It is largely grown in certain sections of this State and Alabama, in the limestone regions, and when the plant is mowed at the proper stage, before there is too much wood developed in it, the quality of the hay is considered second to none of the clover family, alfalfa not excepted. It thrives to advantage only on large strongly imprograted with lime, here only on lands strongly impregnated with lime; here only on lands strongly impregnated with lime; here it is at its best and reaches its greatest perfection. It will take root and grow luxuriantly on bare lime spots where there is no other soil on the surface of the ground. In time, left to itself, it will completely hide these unsightly bald places, and corn and other field crops can be grown profitably on the land. It has an enormous tap root that penetrates deep down into the sub soil and grains nourishment from plant food denied to other leguminous plants. It reseeds itself every two years; but if the plant is mowed (in this climate at any rate) or grazed, so that no seed can develop, the plant seems to lose its natural tendency to give up life after two years' growth, and will continue to produce good crops for several years in continue to produce good crops for several years in succession. It has been fully ten years since I have sown any melilotus seed, and yet I find it every year more or less plentiful and luxuriant on my Johnsonmore or less plentiful and luxuriant on my Johnson-grass and Bermuda-grass meadows. Of course, the presence of this plant on the lands named is highly beneficial to these meadows, the coarse, deeply pene-trating tap roots of the melilotus opening up the compact soil and thus conducing to the better growth of both Johnson and Bermuda grasses. Hay made from melilotus when the plant is in just the right stage of growth for best results, and perfectly cured, is a hay that is in every sense equal to the best quality of cow-pea vines, or any of the clover family

In regard to the importance of lime or limestone soil, this is something that I had not got hold of before. Perhaps I might here that I have succeeded in growing plants with wonderful luxuriance in the sandy soils of Northern Michigan. Some seed I sowed there has produced plants as high as my head, the second year. I can indorse all the writer says in regard to its value for stock. I should say it is fully equal to alfalfa, from what experience I have had.

THE "DANDELION COW," INDIAN RUNNER DUCKS, ETC.

Mr. Root:—You ask on page 842, "Is that cow an extra cow?" Of course, she is. Many here claim that a Holstein-Jersey cross is the best cow in existence. The milk from one such cow brought over \$22 at the local creamery in one month some time ago.

W. A. H. GILSTRAP.

Ceres, Cal., June 27, 1907.

Thank you, friend G. Quite a number of others have suggested that she is an extra cow, and I am glad to tell you she is still at it. Wherever we find a great mass of miscellaneous plants—sweet clover, dandelions, all the grasses, or any thing else—we just give her a chance at them. The people who claim that cattle will not eat sweet clover ought to see this one. So far she cleans up every thing indiscriminately except docks and burdocks. She has not yet attained the knack of converting these latter into good rich milk. But the milk is still first class, no matter what food she gets hold of. Surely it begins to look as if we were to have "eggmachines," "milk-machines," and last, but not least, "meat-machines." And that reminds me that the Indian Runner ducks at just 30 days old weigh 2½ lbs. each. Just think of it! from $1\frac{1}{2}$ ounces to $2\frac{1}{2}$ lbs. in only

30 days! I do not think the feed, besides what they picked up (in the same orchard where the cow got the dandelions), has cost over 5 cents each per duck. Is not that getting good meat cheap enough?

DANDELIONS FOR HONEY.

The two articles in regard to dandelions were read with very much interest, as I have always considered it a very valuable plant for bee-keepers, as it comes into bloom so early in the season, and being a plant yielding both pollen and honey. The market gardeners at Belmont, Arlington, Beverly, and other surburban places near Boston, Mass., have for years been raising dandelions for the New England trade; and, being a plant that seeds very heavily, and spreading by being cut, the land in some sections of the State is like a bed of gold when in bloom. Nothing better than dandelions for greens.

In 1894 I was working in the apiary of Mr. J. D. Goodrich, East Hardwick, Vt., Vermont's veteran apiarist and practical queenbreeder. The fields were golden when the dandelions were in bloom; and the bees, being extra strong for the time of year, stored honey very fast from the dandelions, so we had to extract it from several colonies; also put on some extracting-supers to give the bees more room so as not to crowd the broodchamber with honey. I have never seen any thing like it since from the same source.

Pure dandelion honey is of fine flavor, a very light green as to color, but granulates very quickly, being nearly solid in three days

wery quickly, being hearty after extracting if not sealed from the air.

Mr. Root, I think you have an extra good cow, and would sell for a good price here—

\$75.00 or more.

BROOKS D. COOK. South Lyndeboro, N. H., June 24.

CAN BEES HEAR?

I like to study bees and chickens, and all domestic animals—in fact, all animated nature, especially when I am able to lend a helping hand. But I like to talk to bright boys who want to learn more than to do any thing else in the world. While at Dry Knob, Mo., last fall, spending an evening, a young bee-keeper called, and, soon after, another one. The name of the latter was Joseph M. Tietz. Well, I do not know that I ever spent a happier evening than in talking with those two boys, answering their numerous questions and giving them encouraging words in battling against obstacles that seemed to lie in the way of their progress and across the pathway from earth to heaven. The incident was called to mind by the following letter:

I believe it was Dr. Miller who asked, "What have we got to prove that bees can hear?" I am not certain that is right, but, as well as I remember, it is what Mr. A. I. Root told me last fall when in Laclede County. Here is a very simple way to prove that bees can hear; and, not only that, but that their hearing is very good.

At the close of day, when the bees have ceased work, and you can hear that comfortable droning in the hive,

go to the back of the hive, stoop down, and bring your hands together so as to make as loud a report as possible. Listen and you will hear that loud roar of disturbance. Wait a moment and clap your hands again; another roar will be heard. At the end of two or three clappings (if they have been loud enough) you will see bees running excitedly out of and into the entrance, hunting for the racket.

You do not have to be right at the hive for them to hear it. With your hands one foot from the hive, and your ears two feet from the hive, they can very easily hear you, and so can you hear them. I tried it on several colonies the other evening with the same effect on all of them. Please try it.

Oakland, Mo., April 29.

R. D. WILSON.

While I would call the above experiment quite conclusive, I know some urge that the bees felt the vibration of the clapping hands; to which I would reply that, if I am correct, all sound is vibration, and I myself am pretty well satisfied that bees hear just as human beings or other animals hear; and, as our young friend proves, their hearing is very acute.

OUR MILLIONAIRES AND DIVORCES.

I have several times made comments in regard to the way our modern millionaires are trampling not only law but decency under foot, putting away their old wives who labored hard and faithfully to help accumulate the wealth (no doubt many times harder and more faithfully than the men themselves) that they might be unhindered and unhampered in chasing after some sensational actress. Dan Hanna's recent divorce and third marriage have called forth more comment and protest than almost any thing hereto-fore. If I remember correctly, after he had been divorced from two wives he has recently (and almost immediately after the divorce) married another one, and a divorced one at that. The editor of our Medina Gazette sums it up in a terse and forcible way that might seem pretty severe to some people, but I think he is only taking the stand that should be taken by every home paper in our land. Here it is. What do you think of it?

Dan Hanna's frequent divorces and marriages make a fine commentary on the divorce laws of this nation. When he gets sick of a wife he simply casts her off, forces a divorce by his nasty conduct and the lure of a big alimony, and then—marries another one! This is done by law. How can respect for marriage and the home thrive when law permits this sort of legalized libertinism? It is such as Dan Hanna that do more injury to the morals of this country than all the common criminals in it, and the divorce laws become a public stench because of such reprobates.

Now, friends, this is a serious matter. We might argue that if men and women agree to this sort of thing it is their own affair; but how about the children born of such marriages? and how about the example these rich and many times influential men set before all our children - our boys and girls? What will become of the homes of our land Or shall we give up if this thing continues? entirely having homes for our people and our children? May God help us; and may he help our good President in the firm stand he takes in defense of our homes and the unborn children of the future.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 70 Cortlandt St., New York City.

ITALIAN bees and queens bred for honey; price list ee. B. F. YANCEY & SON, Angleton, Tex. free.

FINEST Golden and red-clover queens, Caucasian and Carniolan. Daniel Wurth & Grant. Pitkin. Ark.

ITALIAN AND CAUCASIAN bees and queens of best quality; price list free. A. E. TITOFF, Ioamosa, Cal.

MAPLEWOOD APIARY.—Choice comb honey, Italian bees and queens. GEO.H. REA, Reynoldsville, Pa. R. 2.

ROOT'S SUPPLIES at factory prices; wholesale and retail.

ITALIAN BEES, queens, and bee supplies. H. H. JEPSON, 182 Friend St., Boston, Mass.

ITALIAN BEES, queens, nuclei, and bee-keepers' supplies. A. T. DOCKHAM, Rt.1, Box 95, Eagle Bend, Minn.

ITALIAN BEES, queens, beeswax, honey, and bee-eepers' supplies. M. E. TRIBBLE, Marshall, Mo. keepers' supplies.

FOR SALE.—Bee-keepers' supplies. Write for catalog. Lengst & Koenig, 127 S. 13th St., Saginaw, Mich.

FOR SALE.—Golden and red-clover Italian queens. Wm. A. Shuff, 4426 Osage Ave., Philadelphia, Pa.

ITALIAN BEES and queens—red-clover and golden trains. E. E. MOTT, Glenwood, Cass Co., Mich. strains.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan, Cyprian queens. E. L. Pratt, Swarthmore, Pa.

QUEENS. Free list giving safe method of introducing, ready Feb. 15. E. E. LAWRENCE, Doniphan, Mo.

ITALIAN BEES, queens, honey, and ROOT's bee-keep-rs' supplies. Aliso Apiary, El Toro, Cal. ers' supplies.

For Sale.—Root's bee-supplies, wholesale and retail; factory prices; catalog free. Beeswax wanted. W. E. Tribbett, Staunton, Va.

Improved Carniolans always winter best, breed up strongest early in the spring; the finest comb-honey builders. (Italians for those preferring them.) Catalog free.

W. W. CRIM, Pekin, Ind.

GOLDEN-ALL-OVER Caucasian Banat bees and queens. We book orders for early queens from our best imported breeding stock for honey, with 600 twin mating-boxes. The SNYDER APIARIES, Lebanon, Pa.

QUEENS.—Improved Red-clover Italians bred for business; June 1 to Nov. 15, untested queens, 60c; testness, \$1.00 each. Safe arrival and satisfaction guar-anteed. H. C. CLEMONS, Boyd, Ky.

IMPROVED ITALIAN QUEENS now ready; nuclei and colonies about May 10, Danzenbaker or L. frames; 20 years a queen-breeder; 500 colonies to draw from. Circular and testimonials free.

QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.

ANGEL'S GOLDEN BEAUTIES and his bright three-ANGEL'S GOLDEN BEAUTIES and his Dright three-banded Italian Queens have but few equals and no su-periors. A fine large queen of either strain for \$1.00; an extra select breeder for \$2.50. I have had 12 years' experience at queen-breeding. Address SAMUEL M. ANGEL, Route 1, Evansville, Ind.



JAPANESE BUCKWHEHT.

We have a supply of choica Japanese buckwheat for seed at \$2.50 per bag of 2 bushels; \$1.50 per bushel; \$5 cts. ½ bushel; 45 cts. a pock, hags included; shipped by freight or express at your express. By mail, postpaid, at 13 cts. per lb.

SECOND-HAND 60-LB. CANS.

We have on hand from 100 to 200 boxes of good sec-nd-hand 60-15, honey cans, two in a box. The cans ond-hand 60-15, honey cans, two in a box. The cans are free from rust on the inside, and very little on the outside. The box's are repaired and in good condition. We offer these in 5-box lots or over at 40 cts. a box; 25 boxes at 35 cts a box; 50 boxes at 30 cts a box. These prices are for shipment from Medina only.

HALF-POUND TEMBLERS.

In making up the two pages of honey-packages in our catalog this year we omitted the half-pound tumbler. We have these packed 32 dozen to the barrel at \$5.50 per barrel, or packed in partitioned cases of four doz-n each, ready to reship when the tumblers are filled with honey, without additional packing; parchment or wax-paper discs also included; \$1.00 per ease; 10 cases at 95 cts.; 25 cases or over at 90 cts.

A B C OF BEE CULTURE.

We want to hear from any dealer or other person We want to near from any dealer or other person having one or more copies of the last edition of the A B C of Bee Culture in perfect condition to dispose of. We shall need every copy available for orders before the new edition is ready in the fall. Several have already reported. Let us hear from others. The price of the new edition will be \$1.50 postpaid; \$1.25 with other goods by express or freight, and a corresponding increase in the wholesale prices. This is made necessary by increased size, better paper and printing, and consequent increased cost to produce the book.

QUEENS.

At last we are in position to furnish queens on demand. The season, as all bee-keepers know, has been very late. The turn has come, however, and Italqueens now are more than usually good, especially those from the famous Vernon Burt stock, which we mentioned last year. We can furnish just what, is

wanted.

Of Caucasians we can furnish all grades- untested. tested, select tested, and breeders. If you are in the market for good queens for any purpose we are in position to serve you. Generally speaking, queens raised in summer are better, stronger, and more uniform than those reared very early or late in the season. See prices on page 990.

OUR NEW YORK OFFICE.

Our office in New York has removed to the Evening Post building, in Vesey St., opposite the cemetery of St. Paul's church, one of the landmarks of New York. The new office is somewhat nearer Broadway, only the Astor House intervening between. Our warshouse is in Hoboken, at the foot of 7th Street and River Boad which gives up ronvelors cornections with the is in Hodden, at the foot of th Street and River Road, which gives us very close connections with the great transatiantic steamers and the great railroad systems which terminate in New York. Our telephone connection is \$43 Cortland. Call our manager up, and he is at your service with all the unequaled facilities of the port of greater New York. If you are in a very great hurry for goods, just let him know.

FAULTLESS SPRAYERS.

This is one of the most useful little implements ever invented, and this is the time of year when it is needed to spray shrubs, plants, and especially potato-

vines, to kill the bugs. It is also used as a kerosene sprayer on cattle to keep off flies. They are so cheap that you should have several, each loaded with the different mixtures needed for various purposes. We have some 20 to 30 dozen, which we offer, to close out, at 27 ots. each; three for 75 cts.; \$2.50 per dozen, made all of tin. With galvanized iron tank, 35 cts. each; three for \$1.00; \$3.50 per dozen. We could not replace this stock to sell at these prices. Some of our dealers also have a supply on hand.

Special Notices by A. I. Root.

CRIMSON CLOVER, DWARF ESSEX RAPE, ETC.

Now is the time to sow crimson clover-the quicker the better. It may winter all right if you do not get it in the ground before August; but the last of July or the fore part of August may be better. A little further south it gets root enough, even when sown in September and October; and we have had pretty fair success with it when sown in corn the last time it was cultivated. One of our exchanges suggests that was cultivated. One of our exchanges suggests that you can put in dwarf Essex rape at the same time. Rape will furnish feed in the fall, and the crimson clover may be fed in the spring, and both will benefit the ground when plowed under in the spring.

We have a good article of crimson clover which we

we have a good article of crimson clover which we can furnish at the following prices: Bushel, \$4.50; half-bushel, \$2.40; peck, \$1.25; 1 lb., 10 cts.; by mail, 20 cts.; 3 lbs. by mail, 50 cts.

From 8 to 15 lbs. of seed are needed per acre. On our enriched underdrained ground we have never had

it fail to winter over when sown reasonably early.

For price of dwarf Essex rape, see page 858. June
15 A leaflet on either crimson clover or dwarf Essex rape will be mailed free on application.

STAINLESS-FLAG SUNDAY; THE DEMAND FOR COPIES OF THE "STAINLESS FLAG," ETC.

When I agreed to furnish 100,000 copies of the Stainless Flag provided the Anti-saloon League would agree to distribute them in such a way that they agree to distribute them in such a way that they would be read and used. I was a little fearful that the general interest would not be great enough to take care of so many. The outcome, however, has proven to be one of my "happy surprises." Just as soon as the last journal was out, applications began to come in. Very few asked for only one copy. Some wanted five copies, some ten. One man said he could probably distribute fifty copies where they would be read and do good. A little later on, one wanted 500 copies, and now one good brother who is superintendent of the Anti-Salora Lacron in a large city thinks he can the Anti-saloon League in a large city thinks he can use 1000. In fact, the demand was so great that the friends will have to wait till more are printed. Just now we are sending out single copies only, and I hope you will understand that your orders for the remainder will be taken care of as soon as we can get the pamphlets. Wayne B. Wheeler, the Ohio superintendent who has the matter in charge, wishes us to state that you should each apply to your own State super-intendent of the Anti-saloon League. Each State is supposed to furnish the "Stainless Flag" pamphlets; therefore when you order a number of copies, say more than five or ten, apply to your State superintendent instead of us. I am not able just now to give you the addresses of the different State superintendents, but I think you can find out by a little inquiry.

I will try to furnish, in our next issue, the addresses of the superintendents in all the different States.
On 5 or more copies I think we shall have to ask

applicants to stand postage or express,

THE CONSTRUCTION OF MACADAM ROADS.

The above is the title of a new bulletin, No. 29, just from the Department of Agriculture. It is clear up to date; and if studied and followed it ought to be the means of saving our nation thousands of dollars by telling us just how to spend our time and money in perfecting beautiful and substantial roads throughout our country. I was particularly interested in the subour country. I was particularly interested in the subject of drainage, and that is almost the first thing to be considered in making any sort of road. We are told that bridges and culverts should always be constructed under the direction of a careful and competent engineer. There are two extremes in this matter of sluiceways and culverts. One extreme is to have

them so small that they can not carry off the water. The other extreme is going to too great an expense where only a small outlay is needed. And this latter extreme is where the graft business gets in. to make a culvert that can not carry off the water, or gets smashed by the traffic over it in just a short time; and it is also bad to put in expensive iron sluiceways when a comparatively small tile or sewer-pipe would do the work. We have some very good stone roads in our locality; but so far they have cost about a half more than the engineer's estimates; and after they were made, some of them almost went to after they were made, some of them almost went to ruin because they were not properly cared for. This bulletin says the maintenance of a macadam road should begin on the day the road is completed. Too much emphasis can not well be put on this point. It is tremendously expensive to have puddles of water standing for days and weeks in any kind of road. The increasing number of automobiles is constantly making necessary better roads; and the swift-ly moving cars, we shall have to confess, are doing a considerable amount of damage to good roads by picking up the loose sand and dust and having it blown off in the fields. It seems that coal tar, oil, and asphaltum will have to be used to preserve a nice smooth road

This bulletin is well illustrated, and contains reports from different States that have made big headway in making good roads; and it also gives us some very careful estimates as to the cost, etc. So far as I car learn, this bulletin is sent free on application to the Department of Agriculture, Washington.

"WATCH AND SEE US GROW;" THE INDIAN RUNNER DUCKS.

They are just six weeks old to-day, July 12, and one of them weighs almost four pounds. I could not get his exact weight, because he made such a lively kicking. My method of feeding may have had something to do with their remarkable growth. Their feed is ground corn and oats or chop, such as we use for horses. This is mixed with skim milk or sour milk. I give them just what they will eat up clean and no more, and feed them only when they get hungry enough to come up and tease for their rations. During rainy weather, when they can find plenty of aning rainy weather, when they can find plenty of angleworms and insects, they do not seem to care much for their feed; but at other times they come around for it about three times a day. When the chopped feed is wet up with water it does not seem to sustain them as long as when it is wet up with milk. With the milk they do very well on two feeds a day. When there is no milk, however, it takes about three feeds.

Convention Notice.

PROGRAM OF THE EIGHTH ANNUAL MEETING OF THE TEXAS BEE-KREPERS' ASSOCIATION, COL-LEGE STATION, TEXAS, JULY 23-25.

The annual address by the President. Reading of the minutes of last meeting. Report of the Secretary

Business of the association.

Discussions

1. Making hives at home; some facts and figures, ty O. P. Hyde, Floresville.
2. Why I prefer the shallow divisible hives and supers throughout, over deeper ones, by Louis H. Scholl, New Braunfels.

3. Some short cuts in running a large number of out-yards, by W. O. Victor, Hondo.
4. Are the Holy Land and Cyprian bees an all-purpose bee for the average bee-keeper? by W. H. Laws, Beeville.

Laws, Beeville.

5. Baby or large nuclei. Which are in most extensive use, and why? by Willie Atchley, Beeville,
6. Bee-keepers' exhibits at fairs and as an advertising medium, by C. S. Phillips, Waco.
7. The pure-food laws and honey prices for Texas bee-keepers, by Udo Toepperwein, San Antonio.
8. How are the funds appropriated for foul-brood inspection used? by A. F. Conradi, College Station.
The question-box is again to be one of the main features of the program, in which all bee-keepers present may take part and ask such questions that are of interest to them. A large attendance is expected. There will be a low rate of one cent a mile, round trip, to College this year.
LOUIS H. SCHOLL, Sec'y and Treas., W. O. VICTOR,

Louis H. Scholl, Sec'y and Treas., W. O. Victor, New Braunfels, Texas. Com. on Prog.